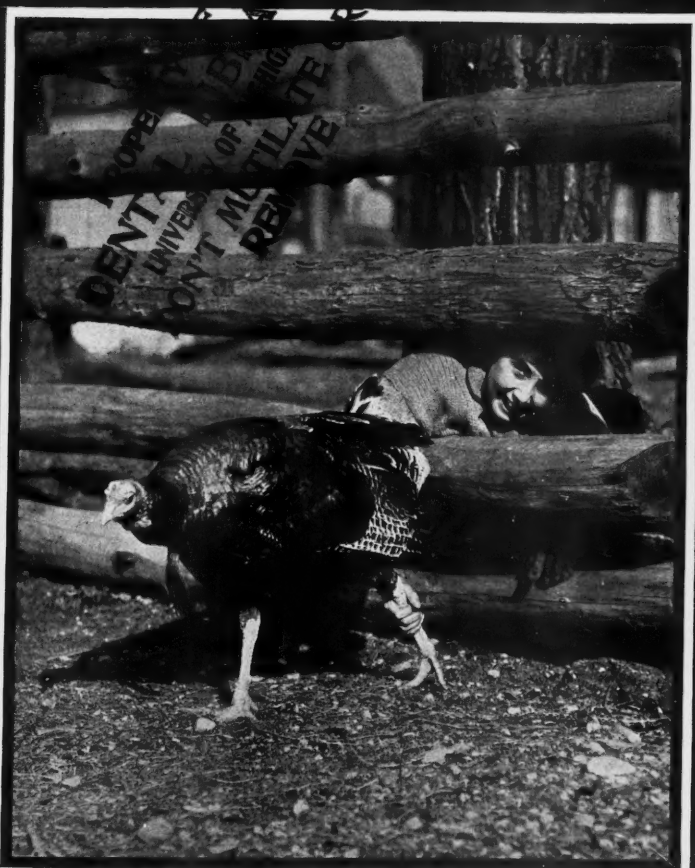
THE DENTAL DIGEST



NOVEMBER-1921
VOL XXVII, NO.11

EDITED BY
GEORGE WOOD CLAPP, D.D.S.
PUBLISHED BY
THE DENTISTS' SUPPLY CO
CANDLER BLDG. TIMES SQUARE
220 WEST 42ND ST. NEW YORK.

Gold — the Eternal Metal

A Thirteenth Century Precept

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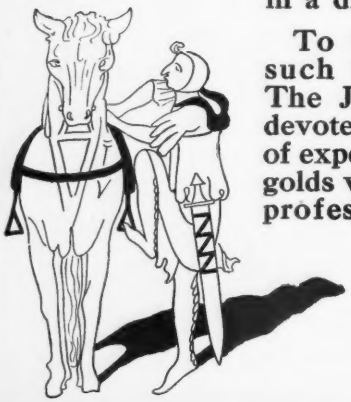
Much depends on the formulæ and methods of alloying, and for dental use the gold for each specific purpose must be prepared in a different way.



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THE
DENTAL DIGEST

Vol. XXVII NOVEMBER, 1921 No. 11

Some Etiologic Factors and Treatment of Post Extraction Pain

By Maurice Smith, D.D.S., Los Angeles, California

A. Failure to properly prepare or instruct patient previous to operation.

B. Unsterile field of operation, instruments or solution.

C. Trauma.

D. Improper curettement or failure to curette.

E. Failure to remove spicules of bone.

F. Insufficient hemorrhage (Anemia).

G. Failure to establish drainage or insufficient drainage in pyogenic infectious conditions.

H. Improper healing of wound.

I. Failure to pack or suture large exposed wound.

J. Failure of operator to instruct patient as to the post-operative care of the wound.

K. Post-operative infection due to negligence of the patient.

A. Failure to Properly Prepare or Instruct Patient Previous to Operation

In the discussion of this most important but frequently neglected factor, it can best be presented under two sub-headings of General, or systemic preparation, and Local, or immediate preparation:

1. *General or Systemic Preparation:* In palpation or X-ray diagnosis previous to the extraction of teeth, if a chronic granulomatous condition, rarefaction, necrosed or cystic condition is found to be prevalent, surgical interference or treatment should be deferred until a general physical examination has been given and corroborated and a complete history of the patient taken as to hemopheliac tendencies, difficulties encountered in previous extractions, tendencies to syncope, tolerance to Adrenalin, etc., of all of which due cognizance should be taken and recorded.

The night prior to the operation the patient should be instructed to take a laxative, preferably epsom salts with a little lemon juice to aid in the emptying of the bowels and the removal of toxic end products which may have accumulated.

If the patient be of a highly nervous temperament, Sedatives in the form of bromides should be given.

The patient should be instructed to wear loose clothing so as to allow free respiration during the operation.

It is best to have the patient abstain from breakfast.

In Hemopheliacs, calcium salts or horse serum should be administered.

2. *Local or Immediate Preparation:* Upon the patient's arrival at the office a pleasant reception should be accorded and a reassurance of complete confidence in the operator's ability.

The patient should then be clothed and seated properly, the teeth given a thorough prophylaxis and the oral cavity flushed out with a normal saline or antiseptic solution under pressure.

The field of operation should then be painted with an antiseptic agent.

If the patient is subject to syncope, stimulants should now be administered.

It is of paramount importance that all instruments, solutions or anything to be used in conjunction with the operation, be absolutely sterile.

This preparation may seem lengthy, but remember, death of your patient in the chair means the loss of a human life and a ruined career.

B. Unsterile Field of Operation, Instruments and Solution

Under this title it is paramount to heed and needless to reiterate what has heretofore been said regarding asepsis in any kind of surgery. I think the motto, "Sterilize twice before you operate," would be the solution to many post-operative complications.

C. Trauma

For want of better terms of division, this factor I divide into Natural and Unnatural Trauma:

1. *Natural Trauma:* The ordinary laceration, dissection or elevation of the bone and gum tissue.

The spreading of the bone in the process of surgical correction is a natural trauma, and as such cannot be eliminated in the performance of efficient surgery.

Following the operation the parts should be restored to their natural position by pressure, if an undue spreading of the bone has taken place, and by suture, if a large wound is prevalent.

2. *Unnatural Trauma:* Ignorance of the operator or negligence upon his part, is the most exciting cause of this factor.

A thorough anatomical survey, both palpating and mental, should be made of the parts to be operated upon.

In the case of multiple rooted teeth, where there is a spreading of the roots, it is best to remove one root at a time, and this should be done at the beginning of the operation and not after an hour of futile efforts and profanity in trying to remove it.

The operator should have perfect control of the instruments being used, obtaining the necessary finger grips, finger rests and applying pressure in the correct line of force.

The patient should be instructed to apply ice packs as soon as convenient following excessive trauma, so as to allay possible inflammation and swelling.

D. Improper Curettement or Failure to Curette

Pages could be written upon this subject alone. Suffice it to say that where encapsulated infection is present, curettement should be resorted to for its removal.

Care should be exercised in curettement so as not to injure underlying tissue or to push the infection into the antrum or cancelated portion of the bone tissue.

Where there is diffused infection I think curettement should be abstained from and proper drainage should be established, flushing out the sinus with warm saline solution or volatile antiseptics.

E. Failure to Remove Spicules of Bone

The small pieces of process which may have been fractured during the operation should be removed in their entirety. Failure to do this results in a retardation of the healing process due to a continued irritation from the spicules or sharp points of the bone.

F. Insufficient Hemorrhage (Anemia)

Following the extraction of any of the teeth in an anemic patient, hemorrhage should be stimulated and a healthy blood clot obtained. This will close up the wound and protect it from infection and the cold air. If the hemorrhage is not sufficient to cause a clot that will fill up the entire socket, then the remaining portion of the clot should be flushed out with a normal saline solution under pressure. The socket should then be packed with 5 per cent. iodoform gauze soaked in a mixture of anesthesin and oil of cloves. This preparation I find to be very efficient in the relief of post-extraction pain.

G. Failure to Establish Drainage or Insufficient Drainage in Pyogenic Infectious Conditions

Following an operation where this condition is existing, it is of extreme importance that proper drainage be established. By proper drainage I mean the sufficient exposure of the infected area and the maintenance of the same by the use of antiseptic gauze packs, tubes

or other appliances, whereby the wound may be kept open until the infection has disappeared and granular healing has been induced. The wound should not be allowed to close up too soon, thereby causing insufficient drainage which may result in the encapsulation of the infection and healing from the outside. Ice packs should be applied on the face overlying the infected parts.

Instruct the patient to keep the bowels moving freely, and to rest.

Continued flushing of the wound with a saline or antiseptic solution will aid in the removal of the infection and stimulate healing.

If the patient contracts chills, stimulants should be administered, preferably brandy, if available, and apply warmth.

H. Improper Healing of the Wound

Do not allow the wound to heal from without inward, but vice versa.

To induce the healing of the wound from within outward, when it is not being done naturally, antiseptic packs should be resorted to in conjunction with a healing stimulant, such as iodoform, tincture of iodine, etc.

I. Failure to Pack or Suture Large Exposed Wounds

Neglect in the carrying out of this procedure may result in extremely painful and serious consequences.

Liability to neuralgic pains, due to the large area of bone exposure, is a possibility, and should be avoided by suturing if there is no infection present, or packing the wound if there is infection.

J. Failure of the Operator to Instruct Patient as to the Post-operative Care of the Wound

The patient should be instructed of the importance of keeping the wound clean, recommending the use of proper saline or antiseptic solutions.

Rest is an important factor in the reduction of blood pressure and as an aid to healing.

K. Post-operative Infection Due to Negligence of the Patient

All instructions to the patient concerning post-extraction treatment should be written, and the patient warned to follow directions accurately. The patients should be instructed not to put their hands in any open wound, and to keep the wound as clean as possible, especially following meals. Hot applications should not be applied promiscuously by the patient, and only when advised by the surgeon. The failure of the patient to comply with this request, will sometimes result in the pointing of an abscess on the face and scar formation following its healing.

901 Black Building.

Medico-Dental Relationship

By H. Howard Powers, D.D.S., Bay City, Mich.

THE relationship between dentistry and medicine, or in plain words, the relationship between physicians and dentists covers a large field for sincere reflection about which much may be written. While this relationship is constantly becoming more harmonious, the rate of improvement is slow. While the two professions work together after a fashion, there seems to be a lack of harmony. The number of physicians who depend upon our diagnoses with respect to the general health of their patient are few and there are many who not only belittle us but our verdict as well. Many there are also who never dream of referring a patient for dental correction. In other words, the dental profession up to the present time has been incapable of forcing the medical profession as a whole to appreciate the important rôle which dentistry plays in the treatment of general systemic disturbances.

As far as the writer knows nothing is being done to facilitate the situation. We of the dental profession seem satisfied to allow this situation to take its own course of progression, whereas much might be done to bring the two professions into a more intimate relationship. True, there are obstacles, but many of these can be removed. We, as dentists, must see ourselves as others see us and the same may be said of our medical brothers. We must inaugurate a "get together" movement of some description, and in order to improve upon the present treatment of mankind for systemic disease, the two professions must act together.

It ill becomes us, as dentists, to place ourselves upon a pedestal and proclaim to the world at large that our thoughts, diagnoses, and decisions are always right, just, and final. We do many things, which in the opinion of the writer, are palpably wrong and to which our medical brother objects strenuously. If the dental profession will see its own short-comings, and to the best of its ability correct them, it is my candid opinion that the medical profession will not be far behind in correcting its own faults. Now let us see if by working on a fifty-fifty basis we cannot bring about the desired result, or at least a great improvement in the present relationship.

First in the way of obstacles, let us attempt to decide as nearly as possible the dividing line between medicine and dentistry. While this line can never be definitely established, it may be approximated and thereby help the situation. Oral Surgery and the Surgery practised by the physician specializing in Nose and Throat work over-lap. Into whose realm of activity does a case of Trifacial Neuralgia fall? Shall the physician or the dentist treat the Antrum case after the ex-

traction has been accomplished? Only by increased personal association with the physician can these questions be equitably decided.

In order to get at this situation intelligently let us first enumerate some of our own faults and afterward a few of those contributed by the physician which, from a dental view-point, we believe to be wrong. Most of us who are specializing in Exodontia and Oral Surgery are indebted to the physician for many of our referred cases of suspected oral focal infection. The dental specialist placed in such a position acts in exactly the same capacity as the physician who is called in consultation on a case with another physician. This referred patient is not the patient of the dental specialist, and he is referred not for treatment but for a thorough and complete oral examination and diagnosis. After this has been accomplished a written report should be made to the physician in charge of the case. If this physician desires to act upon the advice given by the dental specialist he may so order, and the patient then becomes the patient of the dental specialist. How many of us follow such a course? Do not most of us, when a referred patient presents, go ahead and perform any dental operation we deem necessary without taking the physician into our confidence? Might there not be something which the physician is aware of which might contra-indicate some one or all of our procedures?

Another fault found in us by physicians is that our conversation with the patient is impolite, in many instances to the point where a statement made by the physician has been absolutely contradicted by the dentist, and the latter is entirely unaware of the fact. While making this examination it would be wise for us to refrain from expressing any opinion as to the condition of the patient's tonsils, adenoids or any other part which to us has the appearance of being diseased. The proper person to discuss such matters with is the physician in charge. And now, let us make this examination for this patient a real examination—let no minor detail escape and hence be overlooked in the general summing up of your diagnosis. Spare not your radiographic work on account of sympathy for the patient's pocket-book, and let your clinical laboratory perform its duty if necessary. Innocent looking teeth are in many instances deadly menaces. If possible, leave no loop-hole for discussion. If the examination is carefully and systematically performed the physician will be duly impressed with you and your diagnosis. I think we must admit, taking the dental profession as a whole, the writer included, that many of our examinations in the past have been hasty and incomplete. The reason for this can only be ascribed to carelessness and a lack of concentration on the part of the dentist to the case in hand.

And now for another item charged to our account, and unfortunately in many instances only too true, we are charged with sacrificing the

health of children in order to produce, if possible, a healthy and evenly erupted set of permanent teeth. A lady recently brought her son, age nine, to a physician specializing in diseases of children. This boy was under-weight for his age, aenemic looking, etc., etc. Upon examination by this physician of this boy's mouth he advised the extraction of several of his temporary teeth. These teeth were palpably diseased, gums highly irritated, and swollen and from which pus oozed. They were past any possible thought of saving, even temporarily. The mother upon being so advised responded, "But Doctor, I have just had William's teeth examined by Dr. ————, our family dentist, and he said that though some of his teeth were badly decayed, they ought not to be extracted, because if they were taken out his permanent ones would come in crooked. When they get to bothering him too much, bring him back and I will extract them, but let him keep them in his mouth as long as possible," was the advice of this dentist. Which would you prefer to accept the responsibility for, a possible chronic invalid for life, or possible mal-eruption of permanent teeth for this boy?

These are a few of what the writer believes to be dental errors. Let us now turn to those committed by the physician. Many physicians will not place dentistry upon the plane which we, as dentists, believe it should occupy. Many do not appreciate the advance made during the past few years, and insist upon contemplating the profession more as a trade than as a profession. True, his ratio of respect has been increased, but is still well below par. As a natural consequence, chiefly through ignorance of our present aims and endeavors and general efforts, he questions many of our utterances. Evidently we have not been sufficiently successful in our efforts to convince him that dentistry of today is fully the equal of any other branch of medicine, and therefore entitled to a position of respect, such as that occupied by the Eye, Ear, Nose and Throat specialist. How many cases have we had referred to us by the physician with definite instructions to extract this or that tooth which has never been radiographed? In the name of common sense what mental process has been exercised in order to reach such a definite conclusion, or rather demand? I would be afraid to enumerate the number of such demands made upon me—in many instances complete extraction of all teeth have been "ordered." In some instances the demand was justified, in others I would have been guilty of gross malpractice had I concurred in acting upon such orders.

Let us again look at the border line between medicine and dentistry, and this time from the viewpoint of the physician over-stepping from his side. Would it not make interesting reading if we had before us an itemized statement showing the number of teeth extracted, inferior maxillary fractures "bandaged," cysts and small fibrous growths re-

moved, etc., etc., during the past year by the physician? How many cases were referred to you last year already diagnosed by the physician as oral focal infection where the physician exhausted the pharmacopea and failed to give any relief? How many patients come to the dental specialist with a history? And how is this specialist to inaugurate a course of successful treatment without a history of the general condition given by the physician? He might just as well attempt to negotiate that same mythical shrubbery which Moses attempted on that wondrous night of biblical history when the light went out.

Having divided the error column on a fifty-fifty basis, what is the answer? As the writer sees the question, there is only one solution and the answer is lack of association between the two professions, lack of intimacy, lack of mutual understanding. The time has come when the physician must accept the dentist as a brother and not as an inferior brother. The time has come when in order for either side to advance, they must march side by side. How can this be brought to pass?

At the present time, I am advised by a physician friend, a dentist is ineligible for membership in any County Medical Society, but he may become an associate member through special action of the local society. Have you considered what might be gained through a membership in one of these societies? True, much that would be discussed would be of slight interest to us, but consider what might be the outcome of such membership both from the viewpoint of dentist and physician—how much better our mutual understanding would be. Our present more or less distant plane of relationship would be broken and replaced by intimate professional association, and through interchange of ideas medico-dental treatment of disease must be greatly accelerated and developed. Rules and laws made by men must be altered as time passes. Is there any logical reason why the medical profession could not be made to see the light of present day dentistry, repeal the rule, and make the dentist a member of its local society for the ultimate good of both professions? Could this movement not be started by having each State Dental Society select a committee to go before each State Medical Society and in this way bring up for consideration?

Intimate association both personal and professional will cause many of our present obstacles to fade, as the shadows before the dawn, and mankind will be more intelligently served and benefited.

Increasing the Naturalness of Anterior Restorations

By George Wood Clapp, D.D.S., New York

MANY dentists are giving more or less unnatural appearance to what would otherwise be fine prosthetic restorations by employing artificial teeth in which the depth of color and its placement are exactly alike in the two upper centrals, in the two upper laterals and in the two cuspids. That is, the centrals are like each other, the laterals like each other, and the cuspids like each other, even though the laterals are darker than the centrals and the cuspids darker than the laterals.

The preference for teeth so alike in pairs may arise from a belief that in fine natural upper anteriors the teeth are alike in pairs, or from lack of thought upon the subject or merely from habit resulting from the use of artificial teeth of conventional shading for many years past.

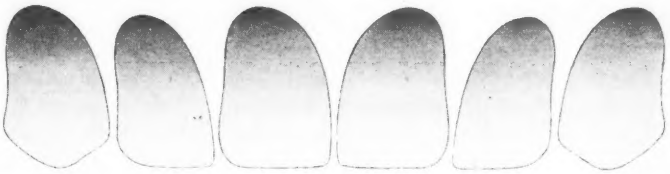


Figure 1. Diagrammatic representation of the shading common to all artificial teeth prior to 1914, in which all the anteriors are of the same shade. This is so unlike the shading in natural teeth that the proper perspectives in the denture cannot be established and a natural effect gotten, no matter how great the skill.

The belief that in fine upper natural anteriors the pairs of teeth are exactly alike in middle life has less foundation in fact than might appear at the first glance. There are many fine sets of natural teeth in which the gradation of color change, through a considerable range, is so subtle that the anteriors appear to be of one depth of hue. It is desirable that the dentures should have this appearance when seen from a distance of a few feet or by eyes entirely untrained in critical study of tooth colors.

When such dentures are subjected to critical analysis, at least three things of great importance to the prosthetist may be discovered:

That there is a much greater change in depth of hue from centrals to cuspids than appeared at first glance. That there may be hues of quite unlike colors in the teeth, such as a gray in the centrals and an orange in the cuspids.

That the teeth in each pair may present hues of different colors, that the hues may be of different depth, and that they may be differently placed in the two teeth; that is, the centrals may be somewhat unlike, the laterals more unlike and the cuspids even more unlike.

If a sufficiently large number of fine natural dentures, in people less than twenty-five years of age, be examined, perhaps one-third of the dentures will present centrals which are practically alike, laterals

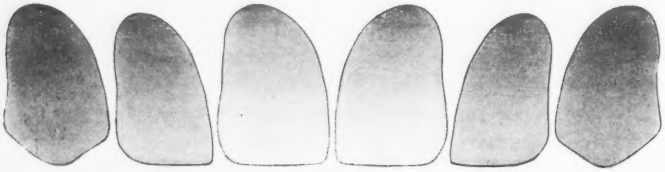


Figure 2. The basis for the change in shading introduced by Dr. Williams and the writer in 1914. The centrals are like those in Figure 1 and are alike. The laterals are slightly darker and of more even color and are alike. The cuspids are slightly darker than the laterals and are alike.

which are practically alike and cuspids which are nearly alike in the character, depth and placement of the color, though of course the centrals will differ from the laterals and the laterals from the cuspids. As age advances, the hue in the teeth changes either in depth or in character, and it appears as if it changed unevenly, perhaps due to injury to teeth in use or by accident, perhaps to inequalities in the cir-

Figure 3. The first of a series of desirable variations based on Figure 2. In the left central the dentine body extends slightly nearer the incisal edge than in the right central. The other teeth are similar to those in Figure 2.

culation, or possibly to causes entirely unknown. In any event, it appears that differences which were so slight as to be invisible or negligible in early life become more apparent in middle life, so that it seems to be rare to find a person past forty years of age in whom the centrals are exactly alike, the laterals exactly alike and the cuspids exactly alike.

The presence of quite unlike colors in different anterior teeth, at least in middle life and later, has been so generally recognized that some prosthetists combine artificial teeth from several sets, when making anterior restorations. When the dentist is of unusual artistic skill the results are pleasing, but success in this course is difficult because the hues shown in shade-guides for artificial teeth were not designed with a view to combination in single sets. In many cases where entirely unlike hues have been combined in a single set of anteriors, it

Figure 4. A little greater variation from Figure 2 than is shown in Figure 3. The centrals are like those in Figure 3 and the right lateral is just enough darker than the left to permit the difference to be seen to the observant eye. The difference is so slight as to be difficult of reproduction here.

leaves the beholder with a feeling that unnecessary violence has been done and that a much more pleasing effect would be achieved if it were possible to obtain sets already made in which the anteriors presented the proper gradation of color from centrals to cuspids was present, and the pairs of centrals, laterals and cuspids, were slightly unlike in depth and placement of hue, but not unlike in character of hue. The

Figure 5. Centrals as in Figure 3. Laterals as in Figure 4. The dentine color is here carried nearer the edge in the left cuspid than in the right cuspid. This variation is frequently seen in natural teeth. It is particularly suitable for patients in middle life or later.

purpose of this article is to tell the story of an effort to produce such artificial anteriors for the benefit of dentists who desire them. Such sets would also save dentists much time and trouble.

Prior to 1914, all the artificial anteriors in a set were as nearly alike in depth and placement of color as it was possible to make them. Exact likeness was the standard of excellence in production. Workers

in the factories were carefully instructed in it, the teeth were intensively inspected to secure it, and the slightest departure from this regularity was considered a fault. One might have shaken a thousand teeth of a given shade in a sack and then taken the first two that came to hand, with the expectation that they would be almost exactly alike in every particular. The resulting appearance was hideous to every trained eye and probably had no small part in developing the name "false teeth."

Figure 6. A modification of anterior shading frequently effected by employing shade 6 for centrals, shade 11 for laterals and shade 14 for cuspids. This introduces three slightly unlike grays and the teeth in each pair are alike. The differences in the grays cannot well be shown here in one color.

In the course of the preliminary work for the production of better artificial teeth, it was decided not only to produce forms in three types and in graded sizes and with the shades graduated from centrals to cuspids, but to introduce as many differences in the depth and placement of the hue in the pairs of anteriors as manufacturing processes permitted and the profession would accept.

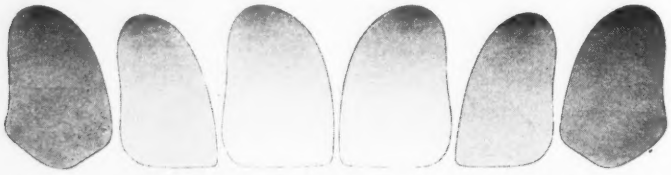


Figure 7. Another modification effected by using shade 6 for centrals, shade 11 for laterals and shade 20 for cuspids. This combination is often used for patients in late life. It introduces another color in the cuspids and the teeth in the pairs are alike unless much time is spent in selecting unlike depths of shade. Only the relative depth of shade can be shown here.

While the typal forms, the graded sizes and the gradation of shades from centrals to cuspids were readily perceived and accepted by the profession, this additional difference from other teeth appears not to have been perceived readily or taken advantage of to the degree that its importance warrants.

This change in placement of color was made possible by the fact that the teeth in which these improvements were incorporated are produced only by workers selected for their skill, and a different series of standards could be introduced. The net result is that it is now possible for the dentist who will exercise a little care in selection to procure anteriors which differ in placement of hue, though the hue is the same. In some sets there is more difference than in others, and many of those in which the difference is most marked are particularly desirable when the patient is past middle life.

What should be the guide in selecting sets to secure the benefit of differences between teeth in the pairs? In the writer's opinion prosthetists should welcome variations in placement of hue which fall below the limit of easy visibility. That is, if upon a glance at the anteriors as a group the general effect is not broken by a striking unlikeness of one or more teeth to the others, the dentist would do well to welcome differences which may appear only upon a critical examination. The importance of these partly-hidden differences in fine natural teeth could be made plain only by an analysis which would become tiresome because of its length and detail. And even though they pass entirely unrecognized by the patient and only partly recognized by many dentists, they make such a contribution to the general effect as to render unnatural in appearance any restoration in which the artificial teeth in the pairs are exactly alike. The dentist who, when making a restoration for a patient of middle age, seeks artificial teeth in which the teeth in the pairs are alike, unconsciously makes it impossible to achieve one of the finest aspects of the restoration.

Dentists who select teeth at the tooth-counter would do well to select sets in which the variations are relatively slight for patients of less than middle age, and sets in which the variations are greater for patients of middle age or later. Occasionally a set can be found in which the variation is quite marked, but does not cause that sense of violence which is effected by the introduction of different colors in the same set of anteriors.

The discrimination in selection which is here suggested will enable the dentist to obtain pleasing variations in anteriors already assembled in sets, and to introduce into his restoration a very important element which is a fairly close imitation of natural conditions. And it will go far to remove the monotony which is unavoidable if the teeth in the pairs are exactly alike, even though the shades be graded from the centrals through the cuspids.

Dental Nomenclature

Report of Committee on Nomenclature, Editors' Club

Read at Milwaukee, August 19, 1921, by Dr. L. P. ANTHONY, Chairman

It is with some temerity that I undertake the task which our host so lightly imposed upon me at the first meeting of this group in Boston, and it is only with the assurance of the moral support of my two colleagues, Drs. Seccombe and McGee, together with my intense interest in the subject, and the hope that I may stimulate the active interest of others present, that I am emboldened to offer what Dr. King has chosen to call a report on Dental Nomenclature.

The development of the science and art of dentistry is going forward with such rapid strides that our present terminology no longer meets the demands of writers and clinicians who endeavor to convey in a clear and understandable manner the results of their efforts.

The literature of a profession is its life-blood. It is the medium which, circulating through the professional structure, provides for that interchange of ideas essential to its development and growth. Through its literature, also, each profession becomes acquainted with the state of development of its sister professions and each profession is judged as to its intellectual stature and the verity of its accomplishments by its literature.

So also are the scientific status, exactness of knowledge, cultural developments and mental habits of the profession distinctly reflected by its literature, and the retarding influence of insufficient and defective vehicles of expression must be removed if we are to keep pace with the other learned professions.

The varied operations and methods of procedure in dental practice demand a nomenclature capable of expressing the refinement and differentiation of meanings peculiar to dentistry, which can only be supplied by an ample and discriminating technical terminology and our present dental nomenclature falls far short of such requirements.

None realize more forcibly our deficiencies in this respect than those who are daily endeavoring to assist authors in conveying their thoughts in language that will be clearly intelligible to their audience. We are all aware of the failures of these endeavors at times, solely as the result of the lack of tools with which to work, and each instance of such failure impresses upon us a crying need and an intense desire to improve the conditions.

It is quite apparent that the busy practitioner is indifferent to this important phase of our literature, seemingly being content with and almost demanding that the subject be dealt with by those intimately concerned with the historical record of dentistry in the literature, namely, teachers, writers, editors, etc.

It is thus my belief that some such body as that here gathered will be the proper one to undertake the task involved in the harmonizing of our present terminology and enlarging it to meet our requirements.

Since the notable efforts of Black, Guilford, Molyneaux, Wilson and others at the time of the World's Columbian Dental Congress, little has been done to increase and enlarge our nomenclature, with the exception of some individual efforts. Individual efforts, while they may be praiseworthy and often productive of much good, inevitably lead to confusion in the use of several words to mean the same thing, and mainly serve to impress more forcibly the neccessity for co-ordination of efforts to the desired end.

Any effort, however, to standardize our nomenclature should be made with a full consciousness of the desirability of conforming it as closely as possible to the general laws of nomenclature as already accepted by the biological sciences. The desirability of this course need not be even pointed out to this audience, nor is it necessary to intimate the enormous step thereby that would be made toward simplifying the elemental phase of our work.

There is a two-fold responsibility involved in the adoption of a scientific dental terminology. Terms must not only express their meaning with precision, but as in medicine many terms are used to express a relation to a pathological or other biological phenomenon. These terms must not only be correct in an etymological sense; they must be so coined as to have a correct scientific meaning, and those who originate them must not only possess the cultural fundamentals necessary to the science of nomenclature, but must also have a broad scientific vision, as well as an intimate knowledge of the subject in all its aspects. In fact, dental nomenclature may almost be considered a specialty in itself.

If we may be pardoned, a suggestion that we believe would, if put into practical operation, materially forward our purpose, it is that this body or a similar one be organized to functionate under the direction of and in collaboration with the National body, to the end that our nomenclature may be controlled, directed and established through an authoritative source. There could well be established a permanent committee to whom all matters pertaining to nomenclature could be referred as well as for the consideration of any suggestions regarding the adoption of new words, and also regarding the desirability of eliminating not a few that have been proven valueless.

Dr. King in suggesting the direction in which our efforts be applied at this particular meeting asked that we submit a list of words for consideration. Realizing, however, the limitations of time that would necessarily be imposed on this occasion, we have incorporated only a few suggestions in relation to some of our most apparent needs.

Dead tooth, devital tooth, devitalized tooth: These terms dead, devital, devitalized, are correct when relating to the pulp, but are in no sense correct as above used. We suggest the term "pulpless tooth," which we find meets all the exigencies of the case except where there is a devitalized pulp remaining in the pulp chamber, and such a condition would call for a phrase rather than a concise term to indicate it clearly.

Acting on the suggestion embodied in the report indicating the desirability of conforming our nomenclature to that of the other biological sciences, we submit for consideration the use of canine, for cuspid; premolar for bicuspid; first molar for sixth year molar; second molar for twelfth year molar; and third molar for wisdom tooth.

Mandible for lower jaw, and maxillae for the upper jaws.

Conduction anesthesia for conductive anesthesia.

Deciduous teeth for temporary, milk and baby teeth.

Periodontoclasia for pyorrhea alveolaris.

Pediadontia to indicate that branch of dentistry which has to do with treatment of children's teeth.

Radiograph to indicate the X-ray process and also as a verb. Radiogram the product of the process. X-ray to indicate the process but not used as a verb. We submit that the words skiagraph, skiagram, roentgenogram, roentgenograph, shadowgraph, shadowgram, are simply contributory to confusion of words to indicate the same thing.

Apicoectomy rather than apectomy, or apicectomy, apico- being the proper adjectival combining form.

Cast for model. Our use of the word model is not in any way justified.

Alveolus as applied to the socket; not to express the alveolar process surrounding the tooth.

Dentural, adjective, relating to the denture.

Alveolectomy, excision of the alveolar process.

The Word "Tooth" in Different Languages

Sanskrit, Hindustani, Armoric, Welsh, Breton, *dant;* Greek, *odont;* Latin, *dens;* Persian, *dandan;* Turkish, *deech;* Arabic, *sin;* Italian, Portuguese, *dente;* Spanish, *diente;* Icelandic, *tonn;* Old Friesic, *toth;* Frisian, *tanne;* Gothic, *tunthus;* Gaelic, *fiacail;* Teutonic, *tanth;* Dutch, Swedish, Danish, *tand;* Old High German, *zand;* Middle High German, *zant;* German, *zahn;* Lithuanian, *dantis;* French, *dent;* Old English, Anglo-Saxon, *toth, too;* Old Saxon, *tand;* Cornish, *danz;* English 14th Century provincial, *toodle;* Scotch, *tend, tooth;* Old Irish, *det;* Hawaiian, *niho;* Japanese, *Ha;* Chinese, *Ga;* Russian, *zub;* Modern English, *tooth.*

Brother Bill's Letters

My Dear Nephew:

Your letter in reply to mine dealing with the conception of success was just what might have been expected. You accept the general idea and from now on propose to include all the major relations of your life within your definition of success. You believe this idea will be of value to you in solving your own financial problems as they have been suggested by your efforts to administer the estate of Dr. B———.

Then you take exception to my phrase, "lopsided conception of ethics." It seems to you to reflect either upon the leaders of the profession to whom you have listened so attentively, or upon the ethics, and you object to both. Well, if I can not show you that the conception of ethics commonly accepted by the members of the profession is narrow in perception, unbalanced in character and financially ruinous to its most devoted adherents, I will withdraw this term "lopsided" and let you name it.

The conception of ethics on which I was "brought up" was that because the patient's need was great and my services ministered to comfort and health, I was under obligation to serve every patient to the best of my ability. Now, that did not mean only that I was to extract a tooth without fee for the patient who was suffering from pulpitis and could not pay even for the extraction. It meant, at least in those days, that I was to make an effort to reduce the pulpitis, remove the pulp, fill the root and fill the tooth, and thus make a valuable contribution to the patient's physical welfare. The matter of the fee came up for

consideration after I had the tooth filled. If the patient could pay a large fee, all the better. If he could pay a small fee, I was to accept that in the proper spirit. If he actually couldn't or merely said that he couldn't pay any fee, I was to dismiss the case from mind with a spirit of thankfulness that I had discharged a part of the obligation which my profession owed to humanity. If well-to-do patients neglected to pay, I was not to press them unduly. If my wife needed a new winter coat, I could not demand the money from some debtor, but could wear mine another winter so that she could have hers. And, finally, the service was always to be of the best in design and execution and the fee always such as the patient could or would readily afford to pay. And well-to-do patients who neglected to pay their bills could return again and again for service and always receive the best.

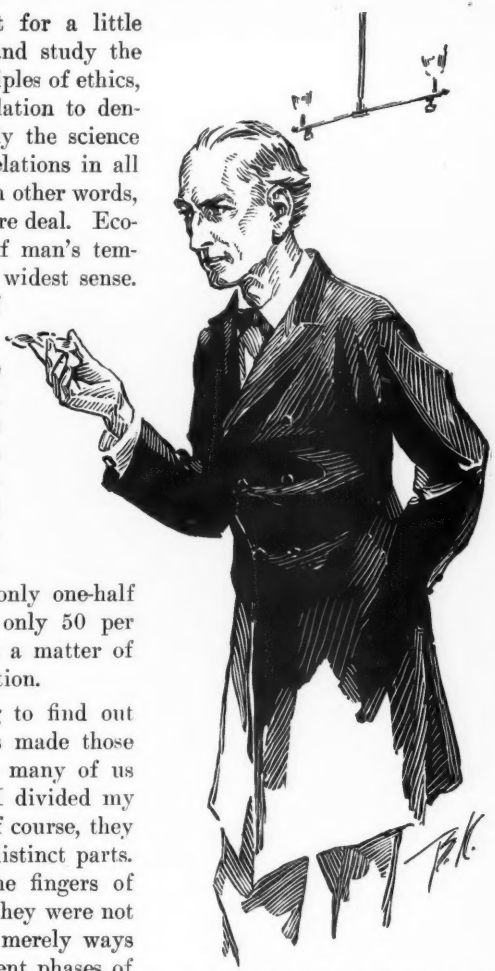
This doctrine, as we constantly heard it from the platform, was not limited to emergencies or to the relief of pain or to simple operations like the removal of a tooth for people who could not pay or the application of soothing remedies. It held with equal force for all forms of dental service. No relation between the cost of the service and the amount of the fee was ever indicated. In fact, in all the early years of my practice, I do not remember hearing the phrase "cost of service" applied to dental practice.

Once in a while some venturesome dentist would rise at the back of an audience and ask if we were supposed to build the back-breaking gold contours then common in the upper anterior teeth, and always made of cohesive foil hammered in bit by bit, for people who could pay only very small fees, or would not pay larger fees or seemed unwilling ever to pay. And then some old and perhaps well-loved practitioner would rise from one of the front benches and say that if the diagnosis called for a gold foil contour in that tooth, that was the thing the dentist ought to put in. And he would talk about the importance of appearance, comfort and health, and our obligation to humanity until he took the audience with him and the youngster would be suppressed.

Now, see what all this led to. It created in the minds of the listening dentists a conception of ethics in which all the rights were on the side of the patient and all the obligations on the side of the dentist. The patient could demand everything and give as little as he liked. I don't think it ever occurred to anybody that the patient was ethically obligated to make as much effort to pay properly as the dentist had been compelled to make to serve him properly. The dentist could demand nothing. He was thought unethical if he kept books or tried to ascertain the cost of service or sent his bills too frequently or pressed them for payment, even though he and his family might need the money.

Now, let us forget for a little about these old days and study the application of the principles of ethics, without any special relation to dentistry. Ethics is merely the science of maintaining right relations in all the activities of life. In other words, it is one-half of the square deal. Economics is the science of man's temporal well being in the widest sense. It is the other half of the square deal.

Each of us in life has many relations with many kinds of persons and things. He who can maintain the attitude of the square deal in every relation in life is 100 per cent. ethical. If he maintains it in only one-half of his relations, he is only 50 per cent. ethical. It is not a matter of talk; it is a matter of action.



*"—Some old and perhaps well loved practitioner would rise * * * * These men poured all of life through one funnel, service to the patient. Most of them died in poverty, some of them as charges upon the charity of their fellow practitioners."*

When I was trying to find out wherein the old leaders made those mistakes which kept so many of us so poor and unhappy, I divided my life into three parts. Of course, they were not separate and distinct parts. They interlaced like the fingers of clasped hands; in fact, they were not parts at all; they were merely ways of thinking about different phases of my major relations in life. Because this division helped me, it may help you, so I give it here.

The first of these divisions of my major relations in life was called the spiritual, into which were put all the aspirations and motives and questions of religious relations. The second division was called the social, and into it were put all my relations to my family and my friends. The third division was called the financial; into it were put all matters relating to the earning of my

living, my relations with my profession as a science, with the other men who practiced it, with the patients whom I served, and all others with whom I had any sort of business contact.

When I had gotten this far, I soon saw three other things; that these three divisions of life interacted continuously with each other, that no one could be subordinated to another because all were equal; that if one of these were exaggerated, at least one of the others would have to be robbed in the same degree and the whole life would thus be thrown out of balance. It inevitably followed that in order to prevent one of these divisions from robbing another, I must recognize each division as one-third of the life, and then that I must maintain the square deal relation between the individual elements in each division of the life.

When applied to patients, and they are what concern us most now, these conclusions meant that I must do emergency work and work for the relief of pain without regard to the fee, as part of my obligation to humanity and to my profession as a science. When it came to service, which was a matter of choice by the patient, I had to stand on the square deal basis with each piece of work. This meant that the patient had no right to choose that particular form of service unless she could pay for it, and that I was under no obligation to perform it unless I received for it at least the cost of the service and a living wage. And with the incorporation of that discovery into my practice, I began to move down the street and away from the poorhouse.

When you have gotten this far, you can easily see the mistake made by the old teachers. If they ever recognized any divisions of the life, if they ever recognized any other claims deserving attention equal to that given to the whims of their patients, they never mentioned them. I do not believe they ever thought of them. They poured all of life through one funnel and that was service to the patient. Most of the sincere ones died in poverty, many of them as charges upon the charity of their fellow-practitioners who, in their turn, were likely to need the same assistance. They sacrificed their families with them, and in some cases the children were saved from graves in the potter's field only by collections taken up among professional friends.

They never mentioned the fact that thousands of patients were better able to pay for services than the dentists were able to render them. They never understood that if they had charged well-to-do patients properly, they could have done much more for patients of limited means. They did not perceive that if well-to-do patients had been made to pay well for good service, it would have enormously increased their appreciation of dentistry as a means of service. It never entered their minds that by cramping themselves so financially they limited

their own professional development and made impossible the attainment of the ideals about which they talked.

You have a partial example of the application of these theories in the case of Dr. B—— whose estate you are helping to close. Not only did he follow the narrow conception of success, so that he robbed other divisions of his life to achieve great knowledge and skill, but he was apparently devoted to the narrow conception of ethics. He appears to have robbed his family in order to serve at a sacrifice people who were in no need of sacrifices by him, who did not desire them, and who would not have thanked him for them. And he leaves his widow either to support herself and three children on 35 cents per day, or to earn the additional sum necessary.

When I had applied to my own life this principle of making each division of my life stand on a square deal basis, and it had been working long enough so that I had moved around the corner out of sight of the poorhouse, I began to talk it over with some of my professional friends who had not yet moved out of the poorhouse neighborhood. They hemmed and hawed, but, one at a time, they tried it a little at a time and with increasing success.

We all soon found ourselves able to improve greatly the quality of our service. We had not only the courage to offer people better things, but the time in which to execute them and the proper frame of mind, because we felt that we were going to be paid for what we did. Our patients showed increased appreciation of our services, though I do not think they knew just what it was they appreciated. But there was less worry in the office, and more poise, stability and sureness.

We also found ourselves able to render to charity a reasonable amount where we knew it would be deserved, and, for the first time, to take pleasure in so doing, because we could afford it. We have among us two or three young friends in the profession whom we have helped by passing along to them those patients who did not wish to pay our fees. We know the young men and their work, and we can see that we are helping them up toward some things we dreamed about in the early part of our professional careers. The patients appreciate the references and get excellent service. And sometimes, when talking these things over, we flatter ourselves that the good feeling among the men in our profession in our town is partly due to these activities on our part.

In times of emergency and stress, men sacrifice home, family, friends and fortune for the sake of some great cause. But in the peaceful and orderly development of a normal life, more will generally be accomplished by recognizing that the life has several major relations, spiritual, social, financial, by giving to each its place and proper importance, and keeping the elements in each division so firmly on the

square deal basis that no division is subordinated or impoverished by excesses in another.

Ethics is not a matter of talk; it is a matter of action. One of its foundation stones is balance, and it is destroyed by excesses in any direction.

Ethics is half of the science of the square deal.

Bill

P. S.—

Just as I signed this, I looked out of the window and saw the youngsters getting ready to take a picture with my old tripod camera. They were having trouble, and several times put their heads under the focussing cloth and then readjusted the camera legs.

Something occurred to me in connection with this letter and I called to them, "Why do you take so much trouble with the tripod?" And I got the answer I wanted for you: "If we don't get all three legs just right, the house looks all tipped on the ground glass and it will not come straight on the print."

Life is something like that camera. The legs of its tripod are the spiritual, social and business divisions. If we do not get all three legs right, it will look "all tipped" on the glass and it can never be trimmed to look just right in the print.

Anesthesia

By George W. Christiansen, D.D.S., Detroit, Mich.

All anesthesia comes under one of these distinct classifications:

1. General Anesthesia.
2. Local Anesthesia.
3. Mixed Anesthesia.

General Anesthesia is that type of anesthesia wherein the central nervous system, namely, the brain and spinal cord; the peripheral nervous system, namely, afferent nerves, efferent nerves, and tactile sense, are brought under the influence of the anesthetic.

Local Anesthesia is that type of anesthesia in which the peripheral nervous system only is brought under the influence of the anesthetic.

Mixed Anesthesia is that type of anesthesia in which the spinal cord and peripheral nerves are brought under the anesthetic influence.

1. To produce General Anesthesia, the anesthetizing substance must enter into the general circulation. General Anesthesia is usually brought about indirectly by insufflation, oral, pharyngeal or intracheally.
2. By administering the drug per rectum.
3. Directly intravenously.

Local Anesthesia—The anesthetization of the end organs, or nerve trunks, is produced by (a) a refrigerant anesthetic. Example: Ethyl chloride spray. (b) By pressure on nerve trunks, or by producing Ischemia of the part, or by regional injection of novocain or similar drug subcutaneously, or into the deeper tissues.

Mixed Anesthesia is obtained by injecting novocain or tropocain into the spinal canal.

General Anesthesia—Its three stages:

1. Induction. 2. Maintenance. 3. Recovery.

Induction, in turn, is subdivided into excitement, (a) cerebral and muscular, (b) stage of rigidity, (c) stage of relaxation.

Stage of recovery is subdivided as follows: Return of the reflexes, return of consciousness.

Stage of induction extends from the beginning of the administration of the anesthetic to the point of general muscular relaxation. Bringing as it does the patient from consciousness to unconsciousness, this stage is necessarily the most difficult and important of the three.

Maintenance extends from the point where general relaxation obtains, to the point where the level of anesthetic is permitted to drop with a view of allowing the patient to recover.

The stage of recovery begins when the anesthetic level is permitted to drop by stopping the administration. This stage ends with the return of the reflexes and consciousness.

Induction Anesthetizes the patient. The *Maintenance* keeps him anesthetized. *Recovery* returns him to consciousness.

Incomplete or partial anesthesia exists where complete relaxation is not obtained. Its use is in opening and curetting abscesses, dressing wounds, etc.

Before starting an anesthetic, the anesthetist should decide as to whether the patient needs complete or incomplete anesthesia.

Excitement asserts itself by an anxious expression, rapid pulse, irregular, sighing respirations, constant clearing of the throat, or fidgety movements of the hands and feet. The patient at this time frequently complains of the odor of the anesthetic or of an uncomfortable face piece. Patients also frequently hold their breath, or talk or laugh. Immediately following a period of fairly satisfactory breathing, a woman patient may begin to struggle violently, tearing off the mask, and attempting to roll off the table. In a man the muscular movements begin slowly, but with terrific strength requiring the combined efforts of those about to restrain him. Jactitation is common as well as expectoration into the face piece.

This period of excitement usually has very definite causes, many of which may be entirely prevented.

Among the most common, are over concentration of the anesthetic, lack of preparation, alcoholism, remarks which the patient may hear when losing consciousness, failure to understand what anesthesia means, and moving the patient while in early stages of induction. At this point one must differentiate normal excitement from the possible sudden determination on the part of the patient to have the operation postponed. The procedure of forcibly anesthetizing the patient may make grounds for suit. Never anesthetize a patient without one or more witnesses.

In endeavoring to control this period of excitement we should remember certain things. Preliminary diet and medication when possible are invaluable. If this, however, is impossible and the case requires deep anesthesia, it is never too late to inquire into urine-analysis, previous anesthetization, etc. If after being instructed to hold the breath the patient is unable to do so for at least 40 seconds, acidosis or poor cardiac compensation may be suspected.

After actual administration has begun, coaxing rather than driving will be found the easier way of producing sleep.

ETHER ADMINISTRATION

Three Methods:

Open Drop.

Semi-Open Drop.

Closed Drop Method.

The Open Method consists of using a mask or wire skeleton facepiece covered with ten or twelve thicknesses of gauze to receive the ether. In this method the mask is put in place and ether supplied to the patient in large clear drops. Induction is sometimes made more pleasant by dropping on the mask some essence of orange or pungent essential oil before the ether is given. As the drop is increased the patient will readily develop a tolerance and soon will accept the ether much more rapidly. The respirations become stertorous. The lid reflex disappears, the jaw relaxes and the eyeballs become fixed, indicating that the stage of maintenance is at hand.

The advantages of the Open Drop Method are that a very simple apparatus is required. Perfect oxygenation is obtained. It is foolproof, and is the best method for maintaining anesthesia in young children.

The disadvantages are that certain vigorous young people and alcoholics can not be controlled by this method. It is extremely wasteful of ether and the patient easily loses bodily heat. This method is frequently attended with acapnia and shock through excessive loss of carbon dioxide. It should not be used with morphine premedication.

The Semi-Open Drop Method is similar to the Open Drop but so modified that communication with the outside air is restricted, thus inducing a certain amount of rebreathing. The restriction of contact with the outside air is brought about by placing towels across the upper and lower thirds of the mask, leaving only the middle third exposed. If the patient proves extremely unruly, the mask may be saturated with ether and the end of the lower towel placed over the middle third, thus excluding all outside air. Instead of towels rubber dam with a small opening in the middle is sometimes used.

Advantages of the Semi-Open Drop:

Vigorous subjects may be anesthetized.
Less waste of ether.
Much less possibility of acapnia.
Because of rebreathing this method is much safer with morphine.

The Disadvantages are:

Oxygenation is not so good.
Control is not so delicate, nor fool-proof, nor very suitable for little children who require a long maintenance period.

The Closed Drop Method is most suitable for all patients for oral insufflation excepting little children, seven years and younger. Nitrous oxide is used for induction and the ether gradually added with the withdrawal eventually of nitrous oxide entirely. The stage of maintenance is controlled with ether and rebreathing.

The Advantages of this method are many:

Induction is more pleasant to the patient and easier for the anesthetist because it is speedier.

Body heat is preserved.

Rebreathing prevents acapnia.

Preliminary morphine is made safe and the control of patient is most delicate.

Oxygen may be given in the most effective manner, namely, mixed with carbon dioxide.

The operating room is almost free from the odor of ether.

The Closed Drop Method, however, requires more expensive apparatus and can not be used where the tidal volume of air is very small, as in babies. Nor is it fool-proof.

Signs of Anesthesia:—Respiratory, color, muscular, eye and pulse.

During the stage of induction, respiration and color are of most importance. Later the muscular signs, then the eye and finally the pulse. When anesthesia is induced under the Open Drop Method, respirations are at first normal in rate, rhythm and amplitude in excitement in the rate increases and the breathing becomes deeper. The rhythm may be here disturbed but as maintenance is reached the rate will increase to 35 or 40 per minute, the rhythm resumed and the breathing deep with stertor. The amplitude will tend to decrease with maintenance. The degree of shallowness will depend upon the amount of rebreathing and the condition of the diaphragm. When recovery is reached the rate will decrease, the rhythm become irregular, and the breathing become quite shallow. In the Closed Drop Method, the nitrous oxide caused the respirations to become more rapid and deeper than normal. Through maintenance they are deeper and in recovery more rapid, regular and deep.

Unusually slow respiration with deep anesthesia may be due to morphine or too much rebreathing. If occurring with the Open Drop use the Closed Drop Method to stimulate respiration. If following too much rebreathing, the condition may be due to depression of the respiratory center from too much carbon dioxide or lack of oxygen.

COLOR SIGNS

Under these we consider three extremes, bright red, cyanosis and pallor. Carbon dioxide, the respiratory stimulant may be considered present in redness and cyanosis, where excessive respiration or hyperacapnia exists. Pallor, however, implies the opposite—acapnia accompanying a greatly diminished respiration. Here it is well to remember that the presence or absence of carbon dioxide has nothing whatever to do with cyanosis. Carbon dioxide is present in the blood serum as a complex acid and does not combine with haemoglobin. While the

fact remains true that a cyanotic patient may suffer from an excess of carbon dioxide, so also may he suffer from a lack of it and yet remain blue. For example, consider a patient who is rebreathing oxygen from a bag. As he continues to rebreathe he will become saturated with carbon dioxide, but his color will remain unchanged. On the other hand, a patient who is made to breathe to and fro into a bag containing atmospheric air (the respirations in their course being made to pass through lime water, which removes carbon dioxide), will soon dispose of the carbon dioxide in his system. He will then become cyanotic, not from carbon dioxide which has been removed, but from a lack of oxygen.

If in anesthesia the Open Drop Method is used due to a loss of carbon dioxide, a patient will in maintenance develop more or less pallor. In the Closed Method with nitrous oxide the patient becomes dusky. This rapidly passes into a marked cyanosis, if air is excluded. The patient should never be permitted to become more than slightly dusky. A marked cyanosis will not only be followed by a delayed induction but also by an increase in blood pressure which may be harmful. If after the stertor comes on, rigidity still exists, free air should be admitted. Persistent cyanosis in the presence of rebreathing would suggest an asthmatic or pneumonic condition, or cardiac insufficiency with excessive blood in the right heart.

In marked hemorrhage a good color should be maintained. Cyanosis now with the decreased circulation is more significant than normally. The ideal color for maintenance is the natural color of the patient plus the slight flush due to the physiologic effect of the anesthetic.

MUSCULAR SIGNS

Masseteric, Lid, Diaphragmatic

The Masseteric sign consists of a relaxation of the muscles of mastication, permitting the mouth to be opened or closed without resistance. Occasionally even when complete relaxation exists elsewhere disturbances of respiration will cause incomplete freedom of the jaw.

Relaxation of the upper eye lid.—In normal sleep due to the tone of the orbicularis palpebrarem the eyelids remain closed. In the stage of excitement the upper eyelid, on being drawn back and released, will be found to fall back into place with a certain amount of snap. The lid sign is present when the eyelids on being separated remain open. The lid reflex is sometimes described as an eye sign.

The Diaphragmatic Sign.—This sign is of importance when an extremely high level of maintenance is desired. During normal inspiration the diaphragm moves downward, upon the abdominal viscera, thus distending the abdomen. This in turn raises the abdominal wall.

During excitement the movements of the diaphragm are excessive. As anesthesia progresses, these movements decrease, but the abdomen still raises upon inspiration. If now the level of the anesthetic be excessively raised, the diaphragm will relax and the abdomen, instead of being distended, will sink during inspiration. This sinking of the abdomen during inspiration is one of the greatest dangers and indicates that anesthesia has been pushed too far.

EYE SIGNS

These consist of lid signs, globe signs, and the pupillary signs. The lid reflex consists of the reflex action due to irritation of the sensitive conjunctiva and cornea. These signs are the conjunctivo-palpebral reflex, corneal reflex, and Parson sign.

The Conjunctivo-palpebral reflex is a reflex which causes the eyelid to close, when the tip of the finger in separating the lids gently brushes over the margin of the upper lid. This must be differentiated from the lid reflex under muscular signs.

The Corneal reflex is the most valuable eye sign we have. It is taken as follows: Standing above and behind the patient, the anesthetist gently bathes the orbital conjunctiva by moving the upper lid over it several times. The lids are now separated and the pulp of the third finger, moistened with vaseline, is very gently caused to brush over the center of the cornea. The degree of activity with which the eyelid then closes is one of the most unvarying signs of the depth of anesthesia. Generally speaking one may say that an active corneal reflex and a dangerous level of maintenance do not co-exist.

Parson sign consists of a retraction of the lower lid to the internal canthus of the eye. The cartilaginous rim of the upper eyelid is now pressed against the cornea directly over the pupil. The rapidity with which the lower lid retracts indicates the depth of anesthesia.

ORBITAL SIGNS

As consciousness is lost the eyeballs will become fixed or there will be a slow movement from side to side. During the stage of maintenance with nitrous oxide-oxygen, the eyeballs will usually be found looking fixedly downward. With ether they are usually fixed centrally. In general, we may say that when the eyes are stationary, looking either downward or straight forward, that loss of consciousness is certain.

PUPILLARY SIGNS

Three pupillary changes may occur:

Dilatation of the pupil.

Contraction of the pupil.

Reaction to light.

Two sets of muscles:

Dilator pupillae.

Sphincter pupillae.

Two nervous systems:

Sympathetic, supplying the dilators.

Central, supplying the sphincters.

Two general conditions affect this—stimulation and paralysis. The pupil dilates when the sympathetic nervous system is stimulated. It contracts when the central nervous system is stimulated by light.

When the sympathetic nervous system is paralyzed the pupil contracts because of the tone of the sphincter muscles. When the central nervous system is paralyzed, the pupil dilates by virtue of the elasticity of the elastic fibers of the pupil. During induction due to sympathetic stimulation, the pupils are usually dilated. If premedication by morphine has been used this dilatation is greatly reduced or may be absent altogether. As the stage of relaxation comes on, the sympathetic system will become paralyzed and the pupil will contract. Since the central nervous system is still intact, the reflex to light will remain. During maintenance the condition of the pupil will depend entirely on the depth of the anesthesia. If the latter be light, pain stimuli will cause a mild dilatation. If deep, the pupil will be smaller than usual and the sympathetic stimuli will have little or no effect. If the anesthesia is now pushed, the pupil will dilate by virtue of paralysis of the central nervous system. The light reflex will now have been lost. The corneal reflex absent, and other signs of deep anesthesia manifest themselves.

Here it is always well for the beginner to determine whether this dilatation is sympathetic or that of profound anesthesia. This is easily done. Simply stop the anesthetic and give air. If after a few moments the pupil contracts, we may be sure that the condition was the dilatation of paralysis. However, if the pupil remains unchanged, then the condition was due to light anesthesia.

A contracted pupil with an active light reflex is a safe sign. A contracted pupil without a light reflex indicates morphinism and may be suddenly followed by a paralytic dilatation.

PULSE SIGNS

The pulse is of value only after complete relaxation is obtained. Rhythm is a normal condition. Such a disease as exopthalmic goiter will run a very rapid pulse. Frequently the pulse will soar on pain stimuli but the skipping of the beats and a constant pulse of 140 or over should not be overlooked.

As a means of anesthesia nitrous oxide-oxygen has met with wonderful success. The conspicuous absence of after-effects and the incredibly

short time in which the patient returns to consciousness are strong reasons for its extensive use.

Chloroform finds its chief use in acute pulmonary diseases where nitrous oxide-oxygen is not available. Also in the control of patients who can not well be handled by ether. Present-day pathology points out that chloroform is a dangerous poison. Delayed chloroform poisoning is not an accident, but a fact, and the drug should certainly not be used if other means are available. In general nitrous oxide-oxygen when applicable should be used. Where greater relaxation is demanded ether should be added and finally chloroform when positively indicated, but only from a freshly opened receptacle and with a most thorough realization of its toxic effects and probable untoward results.

In its administration there must be no restriction whatever of outside air. Danger should be suspected with the least change in the respiratory rhythm.

Due to the excellent manipulation of nitrous oxide-oxygen and conductive anesthesia by the majority of the dental profession, these two methods enjoy a position of high esteem. However, in complex antrum cases and unusually difficult third molar impactions, where conductive anesthesia is not indicated, the use of nitrous oxide-oxygen for induction followed by ether for maintenance, will usually be found most satisfactory. Greater relaxation and less danger from shock are now present. The work for both anesthetist and operator is simplified, making dangerous haste unnecessary.

Finally in every case where general anesthesia is used, seek not only to anesthetize a patient and to keep him asleep, but strive to improve the technique, thus making the administration more of an art than a process of uncertainty.

801 Peter Smith Bldg.

Bacteria

A French scientist has long worked at the indications of bacteria found in geological strata, and has published the general result of his observations with a large number of drawings. As might be expected from their simple structure, bacteria appear to have been coeval with the first appearance of organic life on earth, the coccoid form being apparently earlier than the bacillae. Indications of their presence are found in bone, teeth, scales, and coprolites, as well as abundantly in vegetable tissues, the spores and sporanges of ferns appearing to have been especially subject to their attacks. The different species are, as a rule, distinct from those at present in existence. In a milligram of bacteria, there is a population five times as large as that of the earth, provided they are of pure culture.

A Brief Report of a Lecture Upon "Tomes' Fibre, a Tubular Structure; Its Relation to Dental Caries and the Desensitization of Dentin"

By C. F. Bodecker, D.D.S., Berlin, Germany

(Editor's Note.—This report of the paper read before the First District Dental Society of New York is neither exact nor complete. It merely reflects the effect of the lecture upon one in the audience, who was not a particularly well-equipped student of the subject.)

This lecture presented three phases, one of interest to every dentist because of its relation to the progress of dental caries; one of interest to many dentists because of its bearing upon the subject of desensitization of the dentin; and one of more especial interest to histologists. These phases were not presented in the order here given because the histological studies furnished the foundation for the other two phases, which were merely applications.

After stating his subject and purpose, Dr. Bodecker gave a pleasingly condensed history of the investigations of the dentin structure. This résumé left one with the impression that beginning about eighty years ago there had been much study of the histological structure of the dentin and that at the end of about thirty years of such study the principal investigators were pretty well agreed upon a number of points, but differed upon points perhaps not so important.

About 1899 there set in a new period of study, and discoveries made since that time have revealed many inconsistencies in the old interpretations. By means of special methods of treating specimens, and with the use of the ultra violet light, it has been possible for Dr. Bodecker to photograph unstained specimens and to avoid mistakes which might be due to staining. With the aid of objectives such as were not known to investigators of the earlier days it has been possible to correct several errors and to extend knowledge of the minute structure of the dentin.

One gathered the impression that the early investigators were pretty well agreed upon the following points:

That the dentin presented a great number of tubuli.

That there is a substance between the tubuli known as the basis substance.

That the tubuli contained a substance, afterwards known as Tomes' fibre, the nature of which was not fully understood.

And that each tubule was bounded by a definite wall of a material which differed from the basis substance. This wall became known as the sheath of Neuman.

There was much discussion as to whether the fibres in the tubuli were solid or tubular. The appearance of microscopic sections seemed to favor both views and permitted the view that where the tubule was not entirely filled in the specimen, the fibre had shrunk during the preparation. The old ways of preparing specimens, by putrefaction or by the use of a vacuum, gave rise to the criticism that the tubular appearance was destroyed by the process. With exact methods and the finest technic, the tubular structure of the materials in the dental tubules can be shown only under the most powerful objectives now known.

Dr. Bodecker then presented slides from beautifully prepared specimens. In those made under very high magnification, Neuman's sheath was seen clearly defining the tubuli. Inside this sheath was a white ring indicating an open space and inside the white ring a dark ring, the shadow of the organic matter in Tomes' fibre. The centre of this was white, showing an open space, and the deduction appeared unavoidable that Tomes' fibre is tubular in character.

Dr. Bodecker presented the view that these tubes, one outside of Tomes' fibre and one in the centre of Tomes' fibre, are essential to the circulation in the dentin, and that in the tube inside of Neuman's sheath but outside of the dental fibre, the circulation moves in one direction, while inside Tomes' fibre it moves in the other direction.

He believes that there is a relation between this tubular structure of Tomes' fibre and invasion by the bacteria of caries. In microscopic sections of advancing caries it has been difficult to account for germs traveling toward the pulp in advance of the mass, often singly. If Tomes' fibre is tubular and if there is circulation through each tubule, in one direction outside the fibre and in the other direction inside the fibre, the movement of single bacteria might easily be explained. It would, of course, be much easier for germs to move with a circulating current than to advance directly through the body of a solid fibre.

Dr. Bodecker believes that the tubular nature of Tomes' fibre and the circulations in and around it are important in desensitizing dentin. He pointed out that the the circulation of the desensitizing fluid could otherwise be accounted for only by the destruction or compression of the Tomes' fibre, which would unavoidably be accompanied by pain. But pain is not a characteristic of desensitizing dentin when the operation is carefully performed.

Previous to the lecture, Dr. Bodecker gave an extremely interesting clinic in which visitors were given an opportunity to see the specimens showing the tubular nature of Tomes' fibre. He also showed other specimens which tend to establish the presence of organic material in the enamel. It has generally been thought that the enamel contained no organic matter, because if a specimen of human adult enamel is put into an aqueous solution of an acid to be decalcified, the entire

structure seems to disappear and only a fine sediment can be found at the bottom of the bottle. By a special method of staining and preparation, Dr. Bodecker was able to show the organic structure of the delicate sheaths in the enamel.

Dr. Bodecker showed a slide of a fish (diodon) which lives upon the protoplasm within the coral. This protoplasm entirely surrounds itself with a deposit of lime and the fish is compelled to crunch this shell before it can reach its food. In a specimen of the enamel from a tooth of this fish entirely decalcified, the organic matrix presented the entire form of the enamel cap and under great magnification the prismatic appearance could be seen in certain parts of the field.

It has long been thought that human enamel which contained organic matter would be weak, but it is known that the enamel of the teeth in certain animals is rich in organic matter and that in these animals the teeth are subjected to much greater strain than in human teeth.

During the evening lecture Dr. Bodecker showed, in the slides, that prolongations from Tomes' fibre pierce the sheath of Neuman, sometimes at several points, and extend a considerable distance into the basis substance between the tubules, where they sometimes anastomose.

DISCUSSION OF DR. BODECKER'S PAPER

The discussion was opened by Dr. J. Leon Williams, who said that there was nothing inherently improbable in the view advanced by Dr. Bodecker, even if it were not backed up by the convincing evidence which Dr. Bodecker had brought forward. This fibre, or tube, is a prolongation of the odontoblast and in some phases of development in teeth the odontoblast itself, gradually decreasing in diameter, extends for some distance into the dentin. The outer part of the odontoblast is somewhat more condensed than the inner part, or cell, and much more fluid. This condition would naturally be continued in the fibre or tube. It is quite understandable that this internal or more fluid part might, by certain treatment, be partly or wholly evacuated, thus leaving the appearance of a tube. As to the outer space between the fibre and the wall, or Neuman's sheath, that is quite plain, under high power, in most of Dr. Williams' specimens. This space might naturally be expected from all the conditions of development and growth.

The more important or significant thing about this discussion, as Dr. Bodecker pointed out, is that it greatly clarifies or makes more rational our conception of the nutritious or metabolic processes in the dentin.

Dr. Williams then exhibited a number of slides prepared by a method entirely different from that employed by Dr. Bodecker, which seemed to confirm the points brought out by Dr. Bodecker in his slides.

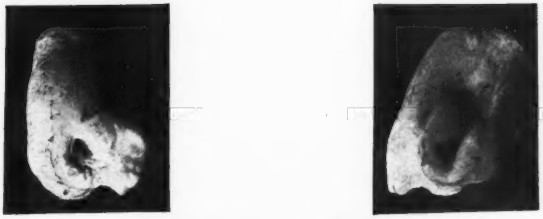
Dr. Williams then took up what he considers the broader and more important phase of the subject, which is the relation of the dentinal fibres, or tubes, to possible metabolic changes in the enamel, and said that he had some new facts to lay before the audience. He then called attention to the fact that twenty-five years previously he had demonstrated that the dentinal fibres in marsupial enamel (the enamel of animals that carry their young in a pouch) entered the enamel and penetrated entirely through it. He said that the bearing of this fact of the penetration of the enamel by dentinal fibres, or tubes, to the paper was this: that there is an abundance of tubes or fibres in human enamel which can be easily stained. Are these tubes, or fibres, formed during the developmental period, prolongations of the dentinal fibres, or are they products of the enamel-forming cells? Do these tubes receive nutrient material from the dentinal tubes or do they contain vital organic substances which may control metabolism in the enamel?

By means of slides Dr. Williams then showed these fibres, or tubes, as stained areas passing entirely through the thickness of the enamel. He also showed that these stained areas exhibit at their origin a sort of bulbous growth or formation in the dentin, and some of them send out roots which penetrate some distance into the dentin matrix. He contended that this must be regarded as a normal condition in human teeth because it is universally found in the best calcified teeth and also because of the almost identical condition exhibited in the very finely formed enamel of the rodents.

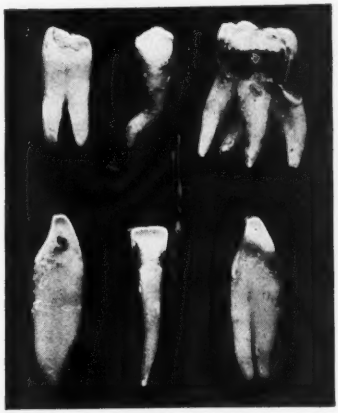
In conclusion, Dr. Williams said he believed that we are on the eve of an entirely new conception of the structure of the enamel and the possibility of metabolic changes in that tissue; and that while all the facts should be freely presented, we should be extremely cautious about forming conclusions on these facts until a very thorough investigation of these new aspects of enamel formation had been well extended and confirmed by a number of investigators.

Dental Anomalies

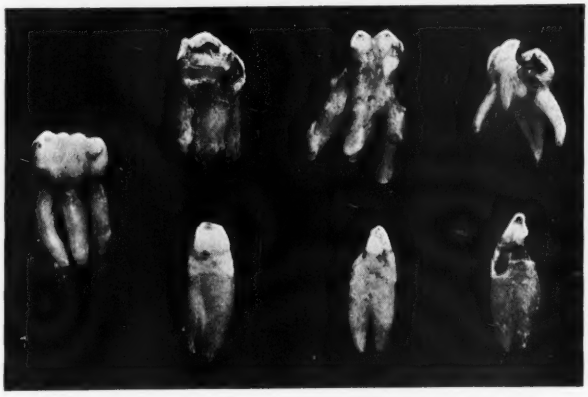
(Continued from October)



DR. BEN. C. BOOGS, Fairfield, Illinois



DR. C. E. ASAY, Visalia, California



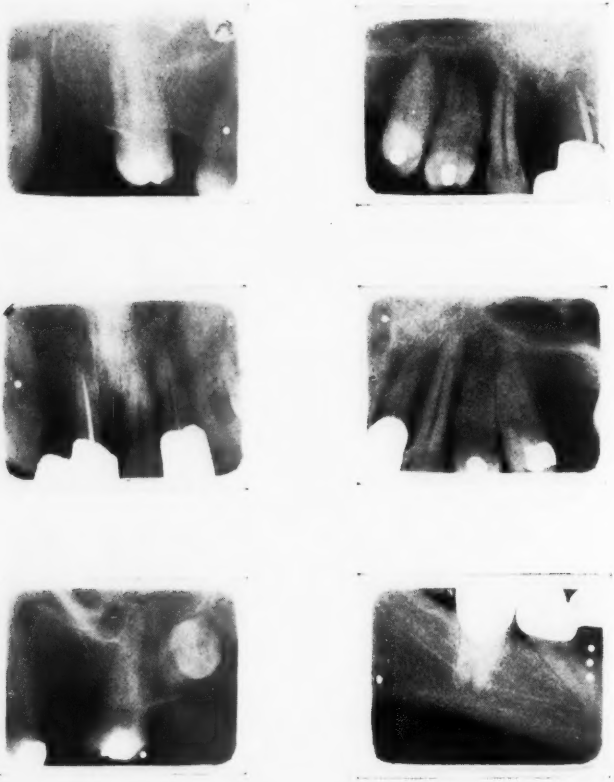
DR. E. M. WHITSETT, St. Louis, Missouri

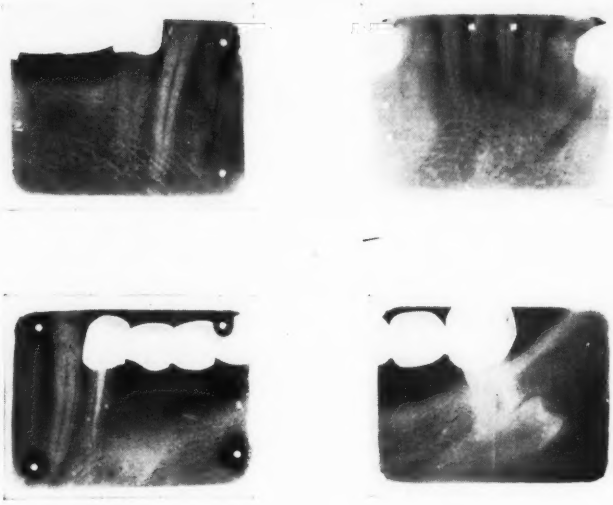
Impaction of Teeth

By Joseph Allen Tucker, D.D.S., Canton, Ohio

Mr. J. A., 26 years, of Canton, Ohio, had suffered with pain in the left maxilla and mandible for the past six years; his right arm and shoulder were partially paralyzed, and of which he had very little use.

He had visited many physicians, and he had his tonsils removed, electric treatments, etc. He had his teeth examined by a well known dentist at Canton, who inserted a number of fillings and bridge-work; but he still had pains in his maxilla and mandible, and his arm was getting worse. He was about ready to leave for Mount Clemens to take treatments, but before he left he was advised by one of my patients





to have his teeth examined again. I had his mouth X-rayed and found two impacted teeth, upper left third molar, and lower left second bicuspid; also an infected lower left cuspid.

An operation under conduction anesthesia consisted in extracting upper left second molar to get access to the impacted third molar, which was rather deep in the process. By the use of a lance, bone retractors, bone chisels, and burs, I removed all the process, till about three-quarter inch deep, and with an elevator I removed impacted tooth. The roots were not fully formed, as the tooth was pressing on the roots of the second molar. The patient suffered very little after-pain. The cavity was healed in ten days.

The patient is now relieved of all his pain, and he has full use of his right arm, and he is able to work.

DENTAL LAWS

Examination Acts in U. S. of America

By Alphonso Irwin, D.D.S., Camden, N. J.

CODIFICATION

(Continued from October)

PENNSYLVANIA—EXAMINATIONS

Any person may present to the Dental Council a written application for a license to practice dentistry, together with a fee of twenty-five dollars and with proof that he or she is not less than twenty-one years of age, is of good moral character, and has obtained a competent education, together with a diploma conferring upon him or her the degree of Doctor of Dental Surgery or other established dental degree from a reputable educational institution approved by the Dental Council and maintaining a four years' course in dentistry and with further proof that the applicant is not at the time under indictment for the violation of any act of Assembly regulating the practice of dentistry; thereupon, the Dental Council may authorize the examination of such person by the State Board of Dental Examiners.

Upon receiving from the Board of Dental Examiners a report of the examination for license of any applicant who shall have been returned as having successfully passed said examination, the Dental Council shall issue to the applicant a license to practice dentistry in the State of Pennsylvania. Every license to practice dentistry issued, pursuant to this act, shall be subscribed by the Officers of the Dental Council and by each Dental Examiner who reported the applicant as having successfully passed the examination such as is provided by this act, and said license shall be sealed with the seal of the Dental Council of the Commonwealth of Pennsylvania and shall be recorded in a book to be kept in the office of the Dental Council, and the number of the book and the page therein containing said record shall be noted upon said license.

Secretary, A. H. Reynolds, 4630 Cedar Avenue, Philadelphia, Pa.

RHODE ISLAND—LAW 1913
Amended 1918

SEC. 4. (*As amended by Chapter 941 of the Public Laws, 1913.*) All persons who hereafter intend to enter the practice of dentistry in this state shall be graduates from a reputable medical or dental college,

legally chartered or incorporated and duly authorized to grant degrees in dentistry in the state in which it is so chartered or incorporated, and shall appear before Board and be examined with reference to their knowledge and skill in dentistry; and to such as pass a satisfactory examination, certificates to that effect, signed by a majority of the members of the Board, shall be issued; and thereupon the names of such persons receiving certificates as aforesaid shall be registered with said Board. But the provision of this section requiring graduation from a medical or dental college shall not apply to any person who shall have made written application to said Board to be examined with reference to his knowledge and skill in dentistry prior to the passage of this act; nor shall it apply to any person who shall have made or shall make application to said Board for such examination within the period of six months next prior to the time this act takes effect; nor shall it apply to any legally qualified dentist of any other state who shall have been practicing dentistry legally for not less than five years prior to the passage hereof and who shall subsequent to the passage hereof present himself for examination before said Board.

SEC. 5. Each person applying for an examination shall pay to said Board, before examination, the sum of twenty dollars, which shall in no case be returned. In case of failure on the part of any person to pass a satisfactory examination, such person shall be entitled to a second examination before said Board, at a subsequent meeting thereof, upon payment to the Board the sum of five dollars. The fees received for examinations shall be applied to defray the expenses of said Board.

SEC. 6. All questions given to each person who takes the examinations shall be written or printed in ink, and the answers given shall be written in ink. The said questions and answers shall be placed on file two years with said Board, and open to the inspection of any person or persons who are affected by such examination.

Secretary, Earnest A. Charbonnel, Providence, R. I.

SOUTH CAROLINA—LAW 1911

SEC. 1129. The Board of Examiners shall meet annually at such time and place as they shall designate, giving thirty days' notice in the public newspapers published in not less than three different places in the state, viz.: One in Charleston, one in Columbia and one in Greenville, of such annual meeting; shall prescribe a course of study for those who study dentistry under private instructions; shall grant licenses to all applicants who undergo a satisfactory examination; shall keep a book in which shall be registered all persons licensed to practice dentistry in the state of South Carolina. The expense of said license shall be fifteen dollars, to be paid by said licensee.

Secretary, R. L. Spencer, Bennettsville, South Carolina.

SOUTH DAKOTA—LAW 1909

SEC. 5. *Examination—License—Revocation—Assumed Name.* A person not already a registered dentist in this state, desiring to practice dentistry therein, shall apply to the secretary of the Board for examination, and pay a fee of $25.00, which in no case shall be refunded. At the next regular meeting he shall present himself for examination and produce his diploma from some dental college of good standing, of which standing the Board shall be the judges, or furnish to the Board satisfactory evidence that he has been engaged in the active practice of dentistry for at least five years immediately preceding such examination. The Board shall give the applicant such an elementary examination as to thoroughly test his fitness for the practice and include therein the subjects of anatomy, physiology, chemistry, materia medica, therapeutics, metallurgy, histology, pathology, and operative, surgical, and mechanical dentistry; and the applicant shall be required to demonstrate his skill in operative and mechanical dentistry. If the applicant successfully passes the examination, he shall be registered by the Board as a licensed dentist, and supplied with a certificate of registration signed by *all members of the Board of Dental Examiners.*

Secretary, L. S. Spencer, Watertown, South Dakota.

TENNESSEE—LAW AS AMENDED 1919

SEC. 4. No person shall practice dentistry in the State of Tennessee, or attempt to do so, after the passage of this Act, without first applying for and obtaining a license for such purpose from the said Board of Dental Examiners, and registering such license as herein provided; and this provision shall apply to all persons, whether they have heretofore practiced dentistry in this state or not, except such persons as have been heretofore licensed and registered. Application shall be made to said Board in writing for license, and shall in every instance, be accompanied by an examination fee of twenty-five dollars ($25.00), which sum is authorized to be charged each applicant for each examination by said Board.

The applicant must be at least twenty-one years of age, of good moral character and reputation; and the application of each person seeking a license must be accompanied by evidence satisfactory to said Board that the applicant so applying is a graduate of and has a diploma from a reputable dental college, dental school, or the dental department of some reputable school or university. Examinations must be both written and clinical, and of such a character as to thoroughly test the qualifications of the applicant to practice dentistry, and the applicant in his examination must make the grade or percentage required by the Board; and the Board may also in its discretion refuse to grant license

to any person found guilty of making false statements, cheating, or fraud, or deception, either in applying for license or in taking said examination.

Secretary, F. W. Meacham, 911 Hamilton Nat'l Bank Building, Chattanooga, Tennessee.

TEXAS—LAW 1919

SEC. 7. Any person desiring to commence the practice of dentistry or dental surgery within the State of Texas after the passage of this Act, shall, before commencing such practice, make application to the Board, and upon payment of $25.00, which shall not be returned to said applicant, and upon presentation of satisfactory evidence of his or her good moral character, and upon presentation of a diploma from a reputable dental college, and upon undergoing a satisfactory examination before said Board on all the subjects pertaining to dentistry, or upon such subjects as the Board in its judgment may deem necessary, and having complied with all other requirements of this Act, shall be granted a license to practice dentistry or dental surgery in the State of Texas; provided, that any person on presentation of satisfactory evidence before the Board that he or she has been regularly engaged in the legal practice of dentistry in any state of the United States for a period of three years next preceding said application, and upon complying with other requirements of this Act, shall be entitled to an examination without the presentation of a diploma; provided, further, that such colleges shall be considered reputable within the meaning of this Act, whose entrance requirements and courses of instruction are as high as those adopted by the better class of dental colleges of the United States; and provided, that the Board appointed under this Act shall be the final judges of a reputable dental college.

Secretary, Harrison B. Cave, 810 Wilson Building, Dallas, Texas.

DENTAL ECONOMICS

A Successful Practice in a Small Town

By W. R. R.

Having read so many articles in the Dental Digest about the so-called, small-town dentist, and about the financial standing of dentists in general, that I thought your readers in the cities and those in the smaller towns would be interested in my experience financially, as a small-town dentist.

I will try to show you how in seven years in a town of less than two thousand population, with two dentists (and sometimes there have been more), I accumulated enough savings to give me a yearly income of nine hundred and eighty-seven dollars.

After practising for several years in the city, I landed in this small western town, with eight dollars in cash, a complete equipment, no debts, a wife with tubercular infection, my own health all shot to pieces; my weight was 120 pounds—it should have been 185 pounds, which it is at the present time. My wife has had three major operations performed by specialists, with all the attending big surgeon fees, hospital fees and traveling expenses.

My age is thirty-nine. I have my savings invested in conservative investments, such as farm loans at ten percent, Electric Light and Power stock, Liberty Loan bonds, United Drug stock, and some real estate. I carry seventeen thousand dollars life insurance, two health and accident policies, own my own home (fully paid up) with a conservative value of seven thousand dollars; also own a two thousand dollar car. I give my wife a monthly allowance of two hundred dollars. I have never invested in speculative stocks. I always figured that a man's business was to make money at his own business and to save money through careful management, to invest his savings in a conservative way and not try to make big profits through speculation, probably losing all that he had saved. I am convinced that you cannot take a chance out of your regular line, no matter how good it may look. Keep out of every new proposition—that has been my investment creed.

I have found that by giving my wife a stipulated amount each month that there is less outlay in the home than by giving her a dollar

whenever she has the courage to ask for it; any woman will do her share in saving if she sees that she is getting a square deal. I have had one dentist tell me that he did not dare tell his wife how much he was making, because she would spend it all. I visited in their home for several days and found that it was not her extravagant ways that was the nigger in the wood-pile, but his parsimoniousness, and found that several thousand dollars of his savings went into a perfectly good home manufacturing concern, and was lost. I never invest a dollar that I do not first discuss it with my wife. Although you may not think much of a woman's advice, still she showed pretty good judgment when she offered to take you for better or worse, and in explaining the proposition to her, you put it up to yourself in your way, and her intuition is most always to be relied upon.

I wish to emphasize that I attribute most of my success to my wife. It is true that I earned the money, but it was she who saved it.

Do not get the impression that we do not live properly in the home; on the contrary we live in the nicest home in the town; my wife's monthly allowance does not cover all the expenditures in the home. I clothe myself; she pays no rent, no coal bills, no taxes, no car up-keep, no expenses incidental to any outing. I will admit, though, that at first her allowance was only seventy-five dollars a month, and then one hundred, later one hundred and fifty, and now it is two hundred dollars a month.

Any money that comes in the form of dividends on savings we immediately put in the savings account, and by the way, that is in my wife's name, and it is not spent for anything but investments; money cannot but accumulate when you invest it in that way.

The foregoing is the way I saved my money, Mr. Editor, and now I will try to show you how I made my money. Probably I should have put the making of the money first; but if you should see fit to print this in the Dental Digest, most readers will finish reading the article if they find it is about saving money. We can all of us make money, and big money too, but it is the saving that bothers us.

There are any number of men in our profession who can give me cards and spades on earning money; to such, of course, I extend congratulations, and ask them not to sneer too openly, and to remember that there are thousands of dentists who do not rest day or night for fear of debt, and to such I extend a helping hand. If a dentist is making money and is not able to keep it, then I hope he has obtained something out of my experiences; if he is not making the money that he feels he is entitled to, then we must find out what his trouble is.

The dentist in a small town is of the same caliber, mentally and physically, when he leaves school, as the dentist who settles in the large town. To build up a practice that is to remunerate him accord-

ing to his needs he must do his work just a bit better than his brother in the city. The city man can have a failure or two and he does not lose much financially nor in prestige, but let the other have one failure at the beginning of his career and he is finished in that town. To give you an illustration: My room-mate in school was a very opinionated sort of a chap, and had the gift of irritating people after meeting them a few times; the first impression was usually very favorable, but his aggressive manner lost him the good will of those who should have been his friends. He wanted to start his practice in a small town. I tried to show him that inasmuch as he made many acquaintances, but few friends, his logical location would be in a large town. He chose the small place and located in a town of less than two thousand population. The first patient was the banker's daughter. He inserted a gold filling that came out in a few days; he re-inserted it with a like result; he came to me for advice; I told him that he might as well move out of that town; he lasted just six months. In a large place he could have overcome his few failures, because he would have an unlimited field to draw from. In a smaller place there is a limit to the field; every operation must be a success. I contend that you can charge a fee in a small place commensurate with your ability to deliver. When you hear remarks about yourself such as this—"He is awfully high but his work is good," then there is no limit to the fee you can demand, with never a remonstrance about the charge.

The dentist in the city who has as successful a practice as the successful dentist in the country, has a harder time collecting his accounts. The people in the city who go to a dentist and get into the chair with the remark, "Fix up my mouth," do not pull out their check-book and settle when the work is completed; instead, you hear the remark, "My husband will be in to settle the bill," or you hear this—"Please send me the statement," and in the course of time you have several thousand dollars on the books, with a good many losses. If you figure that to offset the loss of a hundred dollars you have to earn another three hundred, you can see that the dentist who earns from eight to ten thousand dollars in the city, and has several thousand on his books, with a loss of hundreds in bad accounts each year, does not net as much as his brother in a small town with a practice equally as good.

You may remark, "What does he know about the city dentist?" I was a city dentist, have city dentists in the family, I know the breed.

This is a preliminary to the main object in writing this article. I would rather it were a personal letter to the many dentists in the smaller towns who feel they are a failure. When I write of failure or success, I mean failure financially or success financially. I am not writing anything in this letter but what will help the man who worries about the future and the welfare of his family when he cannot plug

along at his old gait. What a terrible thing it is for a man to dread the approach of old age. What a beautiful thing it is for a man to work along contentedly at his chosen vocation, knowing that he is a success. When your banker seeks your friendship and you owe no man a dollar that you cannot pay promptly, then you are a success, and no word means as much to a man with a family.

I see, Mr. Editor, that you quote some statistician as making the statement that out of fifty thousand dentists in the United States, twenty thousand or more have little or no surplus to show for their work. I cannot believe it is due to their earning powers. Most of the men I know in the profession are making money. The dentist a patient told me about, is making money. I charged her ten dollars for an inlay inserted in the anterior tooth of her son. She paid it very cheerfully, but could not resist the temptation to tell me and show me an inlay, almost similar in position and size, that a brother in another state inserted for three dollars and fifty cents. She said he was a good dentist, his filling proved that he was, and that he was the busiest dentist in that town. He worked day and night, had more than he could do. There is a man that is making money, and I don't doubt that he is making big money, but he is not a success; he is not saving money, he is working for the good of his fellow man, and is driven to working those long hours and making those low prices by fear—fear of competition, fear of the present, fear of the future, fear of bills, and fear of the ability to hold his own. When will we as a profession learn that people are willing to pay a fair fee for all dental work that is put into their mouths? Why work for less than it costs to do the work? What of the money invested in the business? Are we not entitled to interest on our investment in the business, as well as the merchant or any other business? Why take the dollar that rightfully belongs to your family, and hand it back to your patients? They don't know that you are doing it; as a matter of fact neither do you. How would you be considered mentally in your community, if you were to tell a patient that you were working for less than it costs to do the work, for fear that she would go somewhere else and have the work done? How would your family greet you if you were to come home and tell them that they cannot leave the hot city and go to the country, because you had to give Mrs. So-and-So ten dollars back out of a thirty dollar job? Then after having done the generous deed, have the patient remark that she thought it would be so much more!

One should not fear competition. Fear is the sign of failure. One should not work more than six hours a day in our profession, and the man who can't make a living in six days cannot do it in seven. You gain nothing by night work; nature will demand its revenge on the morrow by a physical let down.

Now let us sum up how I made it possible to earn this success. First, train yourself to do your work better than the other fellow, no matter who he may be or what kind of a reputation he may have. Knowing that you excel him in workmanship, gives you the courage to charge a fee that is fair to you and to the patient as well, remembering that the average person does not want charity.

Second, steel your heart and charge a fee that you know to be adequate; and to know that you know, find out how much it has cost you to do that particular piece of work. To find out, I studied the different articles in the Dental Digest; they were most helpful. My first light came from reading Brother Bill's letters; they made one realize what the trouble was, although they had no remedy. Then came the premium book, "Profitable Practice." That helped a lot, and put my own ideas in a tangible shape.

Third, dress the part of a successful professional man. Radiate success, no matter how small the town; dress as though you were going down Fifth Avenue, N. Y. It is worth a lot to have your wife hear the remark, "How clean your husband looks; he always shines as though a fly would roll off him," and then have your wife remark, "Oh! dear, yes; our water bill is outrageous; his daily bath takes a lot of water and my dear, the socks—a pair every day; and a clean suit of underwear every day. I sometimes wish that I had married a farmer, and only have one pair of socks in the wash a week." You get the idea? Team work—one's wife can be a jewel!

Fourth, get away from the office more. You won't lose so very much. I belong to four dental societies and attend them all. I don't hesitate to take a day off now and then, or several if I feel the need to get away; some business gets away, the kind you want stands by you. I take a postgraduate course every year, and of course attend the state society meetings. Get away from your place of business occasionally—you can't make a success of it by sticking day after day. If you do you will be a small man mentally, pretty soon you will be small all over, and end by nagging your wife and greeting your patients in a surly fashion, and then, good night! you are a small town dentist. Look around you and you will see that the men you envy in a professional way are men who do not stick too closely to their office. And no doubt you have wondered how they do it; they do it because of it, that's why!

PRACTICAL HINTS

This department is in charge of Dr. V. C. Smedley, 604 California Bldg., Denver, Colo. To avoid unnecessary delay, Hints, Questions and Answers should be sent direct to him.

UTILIZING OLD RADIOGRAPHIC FILMS.—Take your old films, soak in hot water until clean; dry and cut into three or four strips, widths as desired. They will serve admirably for synthetic work, and at the same time will save you needless expense of buying celluloid matrices.

DR. I. W. M.

NOTE.—If you wish to have your girl do this, all right, but your own time is surely too valuable.—V. C. S.

Editor Practical Hints:

W. V. G.'s trouble from pits in his rubber is caused by the chloroform he uses in swabbing out his flask. Use plain boiling water.

Please tell me why my plates ride in the center of the mouth? I use a good impression tray compound, build up my rim in best possible way, and use soft plaster. I invest my impression before using my model. Will appreciate an answer very much.—B. T. A.

ANSWER.—My plates always ride in the center excepting in the rare mouths that are equally soft clear across the palate, where the impression is taken with plaster, unless relief is provided over the hard area either by scraping the impression or adding on to the model with air chamber material. With straight modeling compound this relief may be provided by softening the impression over this hard area and again inserting to place with pressure.—V. C. S.

Editor Practical Hints:

We have some scrap wax that we would like to melt and make up into sheets. Please advise us as to what would be the best procedure.

R. C. S.

ANSWER.—Melt the wax in a pan of boiling water. Allow it to cool; the dirt and impurities will collect upon the bottom; cut or scrape off to clean wax, or if you have a quantity that will provide sufficient

depth, melt in deep pan or can within a pan of boiling water. Now with a large, smooth bottle filled with cold water dip into wax and remove at once, allowing layer to cool upon bottle. Repeat this until desired thickness is secured. Cut, remove, flatten out on clean table or glass slab, and cut into size and shape sheets desired. If wax tends to stick to bottle, use a little soap on same.—V. C. S.

Editor Practical Hints:

I would like help through THE DENTAL DIGEST for the following case: Some months ago I extracted all the teeth for a patient forty-five years old; she was troubled badly with heart disease; her health has improved greatly since.

After due time a lower and an upper set of teeth were made. She has worn the lower set successfully since, but never could wear the upper, as it always caused vomiting. Her contention was that the plate seemed too bulky. Later on I made her a well-fitting gold blank and she has tried to wear this with no teeth on and no wiring, just plain, smooth and swaged. She has tried to wear these plates for about six months with very little success. I would thank you in advance for any help you can give—J. P. L.

ANSWER.—It has been my experience that this persistent gagging stops when a firm contact is secured at the junction of the hard and soft palates with a good post-dammed impression and sometimes a little scraping of the model in addition. This gagging is usually caused by the tickling action on the soft palate of the posterior border of a plate that does not fit up with a valve seal all the way across. Also locate the palatine canals toward the median line from the condyle on each side. The pulse can generally be felt at these points by gentle pressure with the end of the finger. Scrape the impression or place relief on model over these areas and I think your troubles with this case will be at an end.—V. C. S.

Editor Practical Hints:

About five months ago I made a set of plates for a lady. They fit her splendidly, and she has no trouble in eating. However, she experiences a disagreeable burning sensation whenever she wears the upper plate.

The mucosa is kept clean and shows no sign of irritation or inflammation. Could you tell me the cause of such condition and the remedy, if any?—V. A.

ANSWER.—This burning sensation can generally be relieved by scraping the impression or building up the model for relief over the

three sources of principal nerve and blood supply to the palate. Two posterior palatine toward median line from each condyle, and anterior palatine above prominent median anterior papilla of rugae.—V. C. S.

Editor Practical Hints:

Would you kindly advise me what to substitute in the following case? Here is a little boy 11 years old with right upper central tooth knocked out clean; gum has entirely healed and space where central originally was narrowed at least 2 mm. There is a small cavity on mesial side of right lateral. Bite of lower anteriors is in normal contact with lateral, but with left central is slightly open—just one corner of lower tooth comes in contact. I might add that left central upper seems in perfect health.—R. H. K.

ANSWER.—Can you not widen the narrowed space of the missing central by a simple orthodontic procedure? I then would examine central and lateral adjoining space with X-ray to determine size of pulp. It is possible that the blow which caused loss of right central has stimulated unusual laying down of secondary dentine in adjoining teeth, in which case it would be all right to make fixed bridge with inlay or Carmichael attachments. If pulps are normal for his age, however, fixed bridge would be inadvisable. In this case make a small rubber plate to be worn a few years, or a removable bridge with tooth soldered to small gold saddle, supported embrasure hook clasps in bicuspid area on each side.—V. C. S.

Editor Practical Hints:

Please tell me how to bleach discolored devitalized teeth. Please advise me as well how you bleach vital teeth which are discolored from amalgam. I have tried various methods, but none seems to be permanent. S. M. H.

ANSWER.—To bleach discolored devitalized teeth, seal the apical third thoroughly. Cut away the most discolored portion of the dentine freely. Place dry, sterile cotton in the pulp chamber and body of cavity; seal this in with temporary stopping. Make a small hole in the center of stopping penetrating to the cotton. Take Pyrozone between the beaks of operating pliers, inserting through hole in gutta percha, letting cotton within absorb the liquid. Repeat this several times and seal the hole in the guttapercha with a hot spatula. This will usually bleach a discolored tooth in one application, but may be repeated several times if necessary.

I do not know of any way to bleach teeth discolored from amalgam other than to grind away the discolored portion. If any other reader can give us this information, we will both appreciate same—V. C. S.

CORRESPONDENCE

Editor DENTAL DIGEST:

A matter concerning the health of the nation, which seems to warrant the particular attention of the dental profession, is now being considered by Congress. At a hearing before the Committee of Agriculture of the House of Representatives, Hon. Edward Voigt, Representative in Congress from Wisconsin, said:

> "The Bill which I have introduced proposes an amendment to the Pure Food and Drugs Act in order to prevent the interstate shipment of so-called filled milk. There has grown up in this country during the last four or five years an industry which is growing at an alarming rate in adulterating the milk supply of the country, and I think it is a real danger to the people of this country. The business has grown in a few years 5,000 per cent.; that is, it has grown in five years to be a menace to the milk supply, in my judgment, of the country, and if it keeps on, in a few years the bulk of the canned milk that will be sold in this country will be the so-called filled milk.
>
> "The so-called filled milk which is sold under various trade names is skimmed milk mixed with coconut oil, and if it is set before you on the table you cannot tell the difference between that article and ordinary condensed or evaporated milk.
>
> "The bill I have introduced is H. R. 6215. It seeks to amend the Pure Food and Drugs Act by amending Section 7 by adding a paragraph. Section 7 specifies what shall constitute an adulterated food product, and my amendment is in the following language:
>
> > " 'Third. If in the case of milk, cream, skimmed, condensed, evaporated, concentrated, powdered, dried or desiccated milk, there has been added to the same, or the same has been blended or compounded with any fats or oils other than milk fats,' "

Dr. E. V. McCollum, School of Hygiene and Public Health, Johns Hopkins University, Baltimore, Md., appeared before the Committee in support of this bill, and during his testimony brought out important statements about the teeth.

Professor Lafayette B. Mandel of Yale University in a signed statement upholds the necessity for Vitamines in our food for the

welfare of growing individuals, and states that filled milk compounds should not be recommended for use in infant feeding.

Dr. C. W. Larson, Chief of Dairy Division, Bureau of Animal Industry, Department of Agriculture, testified that in 1920 nearly eight million pounds of coconut oil were used in the manufacture of filled milk, replacing a like quantity of butter fat.

Dr. C. F. Langworthy, Chief of the Office of Home Economics of the Department of Agriculture, testified that filled milk has not the same nutritive value as the milks which contain the butter fat, and cannot have. That filled milk could not replace whole milk fed either to children or to adults.

Dr. E. B. Hart, College of Agriculture of the University of Wisconsin, stated that "at least 90 per cent. of the fat soluble vitamine of whole milk is removed by the modern commercial skimming process."

Mr. A. M. Loomis, Assistant to the Washington Representative of the National Grange, stated "the greatest suffering will come on the general public if this (filled milk substitution) is permitted to go on."

This matter has become so important that Wisconsin, Maryland, Ohio, South Carolina and Florida have already passed laws prohibiting the manufacture of filled milk, and similar bills have been introduced in New Jersey and Pennsylvania.

The medical profession admits faultily-constructed and defective teeth to be the direct cause of physical and mental disorders. Preventative medicine looks largely to the correction of oral defects for a real foundation. State and local governments as well as large business interests know the value of dental clinics. There is every necessary proof that good teeth are vital to the economic and physical well being of the individual and the community.

The dental profession knows the necessity for proper feeding of the mother, the infant, the child and the youth as being essential for the proper growth and development of the teeth. We know that whole milk is a perfect food for young animals, that it contains protein, carbohydrate, salt, water and fat, the principal foods of man as well as a large supply of the necessary vitamines or solubles. Removal or substitution of any of these vital elements cannot help but be injurious, and the commercial attempt to make the coconut replace the cow is serious, is being accomplished, and requires widespread publicity and prompt protest and action to overcome.

H. J. Taylor-Bell, D.D.S.

Dental Secretaries, Hygienists and Assistants

Methods I Have Found Valuable in the Conduct of a Dental Office

By Helen N. Johnson, Fordham, New York

FIRST PRIZE ESSAY

I am working in an office which I first entered as a patient. The desk was covered with a five years' accumulation of old bills and receipts. A year later I was engaged as secretary, with no knowledge of the use of even an explorer. My employer was averse to instruction as well as answering questions, but he did not object to my having my own way, so that I was in every crevice and corner the first week. Then it was up to me. The first thing to do is modernize and file—but file in the right way. We have a card system with several thousand names. The cards are filed alphabetically.

The appointments are transferred to an efficiency sheet each day and the cards taken from the file each morning for the entire day's work. When a patient is finished an envelope is addressed and a card such as No. 1 is mailed a week or so later, and the case-card filed

RECENTLY I COMPLETED SOME DENTAL WORK FOR YOU, AND HOPE IT HAS GIVEN SATISFACTION. I WISH TO REPEAT WHAT WAS SAID AT THAT TIME—IF YOU HAVE ANY TROUBLE IN ANY WAY, YOU ARE URGED TO RETURN AND ALLOW ME TO RECTIFY IT.

AN EXAMINATION OF YOUR TEETH AT LEAST EVERY SIX MONTHS IS ECONOMY AND MUCH BETTER FOR YOUR HEALTH. YOU THEREBY REDUCE TO THE MINIMUM THE COST AND AMOUNT OF WORK TO BE DONE.

Office Hours
Mondays and Thursdays
9 a. m. to 8 p. m.
Other Weekdays
9 a. m. to 6 p. m.
No Sunday Appointments

DR. A. B. BLANK
Dentist
2 East West Street
New York
Telephone, West 1234

No. 1

among finished work. When a new patient enters the chair, the name and necessary information are written in pencil on bottom of card. At the end of the day this is typewritten on top and pencilled notes erased.

If the doctor is going to insert a porcelain filling, the synthetic cabinet is brought to the chair. The tantalum instruments are placed on the bracket table, the ligature is cut, the celluloid strips are rubbed with cocoa-butter, the varnish uncovered, the rubber dam is cut, powdered and punched, and holder put on table. The clamp forceps and clamps are taken out of drawer and the synthetic liquid and shade-guide bottle put in front of slab and agate spatula. This method is carried out for every operation, and as near as possible we try to anticipate the doctor's wants. A tube is always put in the saliva ejector and gauze used under the rubber dam. If it is an extraction, the solution is made, the syringe filled, the iodine bottle is uncovered and the pellets ready. Hot water, to which is added an antiseptic, is brought to the cuspidor for the patient's use after extraction. Anti-dim is applied to the mirrors, which proves useful, especially in examinations. We use finger-bowls for dentures.

No impression enters the laboratory until No. 2 slip is filled out. These padded slips are inexpensive and invaluable. The items are simply checked and time appointment is arranged as marked. The

M..... Dr. .....
..... Shade .....
G. Cr.....Tooth.....Bdge..... Cusp .....
Inlay .....Tooth.....Bdge..... Pinlay .....
Porce. Cr....Tooth U. R..... U. L.....L. R.....L. L.....
Denture..... Upper..... Lower..... Both.....
Style..... Imp..... Bite..... Try-In.....
Appt. .....at.....

No. 2

case and slip are put in a box. At the next sitting the box is brought in to the doctor and slip re-marked for completion or try-in.

Collections are not a problem, as we have none. A retainer is required and gladly paid. As the work progresses it is checked on the cards and our duty is to see that it is paid. The doctor never speaks to a patient concerning payments after the fee is arranged. As appointments are reserved we are told what will be done, and save sufficient time to accomplish it. Also inform the patient the amount due to pay to date. This is told without offense and in a respectful manner, and usually received and treated so.

When an appointment is made by telephone a card is mailed that day to verify it. If for a future appointment a memo. is made and a card sent several days previous to that time like No. 3. If an appoint-

.....

HAS AN APPOINTMENT
WITH
DR. A. B. BLANK

..... at .....o'clock
..... " .....
..... " .....
..... " .....
..... " .....

No. 3

ment is broken without notification (which seldom occurs, as we impress patients when appointments are made that their hour is reserved solely for them), a little note is sent and card No. 4 enclosed.

Please Reserve

(Date)..... at .....o'clock

Signature.....

A CHARGE WILL BE MADE FOR BROKEN APPOINTMENTS
UNLESS SUITABLE NOTICE IS GIVEN

No. 4

Our X-rays are mounted, with name, date, tooth and treatment marked on mount, filed in a cabinet and can be found and referred to at a moment's notice. If any necessity occurs for a change in work being done for a minor, a note of explanation is always sent to the parent.

For prophylaxis we have small mixing cups and use pumice, tooth-paste and either iodine or peroxide as the doctor advises. An additional protection is added for patient's clothing. After treatment a lecture is given the patient on the proper care of teeth, and a suitable cleanser and brush is prescribed.

It is the little niceties of personal service and attention that patients appreciate regardless of the type of clientele. Everything is noticed and stored away for future consideration. It is unnecessary to be effusive for that is repulsive. Be earnest and sincere and no mistaken motives will be attached to your actions.

The receipts are kept in the safe cabinet drawer and checked on slip No. 5. All expenses are entered as they are paid out. We have loose-leaf receipt and expense books with leather covers. All entries are typewritten, which assures neatness and uniformity. The foregoing

Date.....

O. H.
R.
Cash a. m.
p. m.
Checks

Deposit .....

EX.
L.
D.
Adv.
Carf.
.....
.....
.....

Balance
O. K.....

to Dr. B.
ret. "

Deposit
..... Charge

No. 5

is not theory but actual practice, as through system the doctors serve an average of fifteen patients each day.

If the doctor finds that you can order supplies intelligently, and to his advantage, he will be glad to have another detail taken off his mind. Bills from supply houses are kept until statements are received. They are checked and bills destroyed. The statements are filed in the Supply Company's folder. Be sure and keep a reserve stock on hand and replenish as soon as low. To a young lady just entering the profession, reading the dental magazines and studying the dental supply catalogues will prove invaluable.

No mention has been made of sterilization, but it is taken for granted that the proper rules are followed for the sterilization of all instruments and appliances.

Truly a dental assistant must be a composite of many vocations—stenographer, telephone operator, correspondent and nurse. She must

have personality and ability to instil confidence, a pleasant voice, poise, and command respect. If she can attain that standard the field is unlimited. A knowledge of business methods and personal correspondence is essential, but can be developed through experience. If the New York girls were but responsive, a Society might be formed for their mutual benefit to attain a higher standard, and membership would mean a broader outlook and acquaintance for each individual and an enviable asset to the dental profession!

2483 Tiebout Avenue.

DENTAL LABORATORIES

A New Department

The DENTAL DIGEST has long realized that the Dental Laboratory, as an institution, occupied a place of ever-increasing importance to the dental profession and we believe there should be a definite department in dental literature where the problems peculiar to the dental mechanic and his relation to the dentist can be set forth.

This department will be open to the discussion of these problems and is designed to give to the dental laboratory man an opportunity for exchange of opinion on technic and policy. The department will also be open to dentists who have messages for the dental mechanics.

Judging from the comments we have received from many of the leading laboratory men of the country, the department will meet a need which is already beginning to be felt. This fact alone is ample justification for its existence.

Laboratory Association Starts Membership Campaign

The American Dental Laboratories Association, the organization of which was completed at its annual meeting in Milwaukee during the convention of the National Dental Association, has begun an intensive drive among laboratories for members.

This association, as was described in the April issue of THE DENTAL DIGEST, was proposed by a group of the larger laboratory owners during the Boston Meeting of the National Dental Association in August, 1920. A tentative organization was formed to meet again in January, at which time a constitution and by-laws were drawn up and temporary officers elected. At the last meeting, when the permanent organization was formed the constitution and by-laws were adopted and the following officers elected: President, Samuel G. Supplee; Vice-President, J. C. Schwartz; Secretary, W. H. Schroll; Treasurer, I. J. Dresch. The members of the Executive Council are: Dr. H. P. Boos, Samuel G. Supplee, B. I. Martinez, F. C. Miller and E. L. Mueller.

With the association thus launched, a drive for members was decided on and already many applications have been received. Membership in the association is of two kinds, active and associate.

Active members, according to the constitution, shall consist of owners or executives of dental laboratories who are in good standing in their local communities and have had at least five years' experience in mechanical dentistry or in conducting a reputable dental laboratory. Associate members shall consist of skilled laboratory technicians who may qualify as members under standards established by the council.

The object of The American Dental Laboratories Association, as told in the previous announcement in this magazine, is to promote and advance the science and art of mechanical dentistry, to cooperate with the dental profession and to provide for the dissemination of information on laboratory work and to encourage the deeper study of this specialty by those engaged in it. The association also hopes to overcome the present lack of understanding between the profession and the laboratories and thus enable the two to work in closer harmony toward the same goal—better service.

Officers of the association are now engaged in laying out an educational campaign on laboratory technic for both laboratory technicians and the profession. A more detailed announcement of these plans will be made in the near future.

Laboratory owners wishing to become members of the association should make application to the secretary, W. H. Schroll, 5 S. Wabash Avenue, Chicago, Ill. The annual dues will be based on the association's budget expenses and will be paid by active members only.

THE DENTAL DIGEST wishes The American Dental Laboratories Association every possible success and is sure it will make for greater cooperation between the profession and the laboratory.

EXTRACTIONS

Telephone operators should work eight hours and sleep eight hours, but not do both in the same eight hours.

There is nothing more pathetic in life than the spectacle of a sturdy Boy Scout begging his mother not to smoke.

(Heroine)—What are those shrieks?
(Villain)—They have tied an American to a chair and are showing him a bottle of Scotch.

(Mae)—Did your husband take you to the ball game?
(Grace)—Yes. I do wish he would talk to our cook the way he did to that umpire!

"It says here in the paper that Dr. Jones is a pathologist. What does that mean, Dad?"
"A pathologist, my boy, is a doctor who invents diseases for other doctors to cure."

(Scot)—Whit dae ye chairge for a hair cut th' noo?
(Barber)—Eight pence, sir.
(Scot)—And hoo muckle for a shave?
(Barber)—Four pence, sir.
(Scot)—Then gie me head a shave.

(Apprentice)—My brother takes up Greek, Spanish, French, Italian and German.
(Mechanic)—Gee whiz! When does he find time to study so much?
(Apprentice)—Wadda ya mean study? He runs an elevator.

"A probably erroneous impression of the anthropomorphic nature of Jehovah was achieved during my earliest attendance at a Sunday school session, although I thus correctly recited my catechism:
Q.—Why should you love God? A.—Because He made, preserves and redeems me;
—yet, owing to a complete disregard of the comma after 'made,' I carried away a long lasting mental visualization of Deific strawberry jam."

How oft a friend we criticize
As meanly temperamental,
When, if the truth were known, the "why's"
Are basically dental.

Not just an aching tooth or so
That riles his disposition,
But hidden poisons!—as I know—
I've been in this position.

Without bad teeth and oral germs—
A well known doctor speaking,
Declares in no uncertain terms,
There'd be no Bolsheviking.

The detail had just arrived near the front lines when the captain looked around and noticed a private, hatless and coatless.
"Where's the rest of your uniform?" he demanded.
"Back where we came from."
"Go back and get it."
The private vanished and later reappeared, correctly uniformed but without his rifle.
"Where's your gun?"
"Left it back where we came from."
"Listen!" bellowed the captain. "You're a heluva soldier! What were you in civilian life?"
"Plumber's assistant."

ADAM AND EVA

When dis Adam lived in Eden Park,
He gets quite dopey 'long to'rds dark,
An' crawls into his crib,
But do' he sleeps dere wid de game,
His heart is lonely jus' de same;
An' so de Lord Jehovah came
An' swiped off him a rib.

But Ad. snored on—he never woke,
'Till in his back he feels a poke,
An'—hully gee! it's Eve!
"W'y—w'at t' ell's dis?" young Adam cried.
"W'y don't yer know?" de gell replied;
"I'm li'l Eve, yer promis' bride."
Says Ad., "I got yer, Steve!"

(Dis Adam was a chump as yet,
He w'u'ddn't kiss her—on a bet;
He tinks all dat is con.)
Ag'in Jehovah comes one day,
An' pintin' to a tree did say:
"Dat tree fer you ain't healthy—hey?"
Says Adam, "Lord, I'm on!"

But dis makes Eva awful sore;
Her cravin' fer—an apple-core
It nearly makes her faint.
Den Satan comes, dressed like a snake,
An' side remarks ter her he'd make.
"You're 'fraid a single bite ter take;"
Says she, "You bet I ain't!"

She calls to Ad.: "Look here," says she,
"I've picked an apple off'n dat tree,
An' here's a bite fer you!"
No sooner did dey taste dat fruit,
De same idea tru both did shoot:
"I need," says she, "a new spring suit."
Says he, "I'll say yer do!"

An' den de tunder 'n lightin' came,
An' Archangels wid swords of flame
De gates togedder slammed.
Out in de cold, wid aprun skoits,
Poor Ad. and Eve got dere desoits.
But wust of all—th' ting wot hoits—
De Lord said, "You be damned!"

No warmth, no cheerfulness, no healthful ease,
No comfortable feel in any member,
No shade, no shine, no butterflies, no bees,
No fruits, no flowers, no leaves, no birds,
November!

DIETETICS and HEALTH

The Mystery of Vitamines

The local outburst of "vitamines" breaks into public print with astonishing vigor while the scientists who have been devoting all the years since 1913 to "vitamine" experiments calmly inform each other that all that the world will ever know about "vitamines" is yet to be learned.

Perhaps it will astonish the average reader to learn (according to Alfred W. McCann in N. Y. Globe) that there are more than a thousand ways of not capturing a vitamine.

Years of painstaking research have resulted in an incredible number of "discoveries" of things which were thought to be "vitamines" until it was found that the ever-elusive entities, when captured, were dead, dumb, disappointing clods wholly lacking in the physiological kick which they were expected to demonstrate.

What are now termed "vitamines" are really very splendid inferences and the term itself has so filled the heart of science with awe and wonder that it is used by scientists with no flippant assurance, but rather in a manner most guarded and discreet.

Just ten years ago the writer referred to these then neglected factors of nutrition as "solubles." To-day all the scientific investigators have adopted this term. The results of their laboratory work convince them that there are really three of these solubles, which they describe as A, B and C. Funk goes farther than this by asserting that a fourth soluble will doubtless be discovered soon and he has named it in advance "Soluble D."

Of possible interest to everyone is the fact that all the specialists in these solubles (vaguely if not vulgarly dubbed vitamines) are now outspoken in their admission that of themselves the solubles are merely one-sided factors in a well-rounded scheme of nutrition which must include the more familiar proteins, carbohydrates, fats and the too long neglected mineral salts.

Of these mineral salts, which are described as "ash," Dr. Benjamin Harrow of the College of Physicians and Surgeons, Columbia University, a well-known authority on Physiological chemistry, says: "Ash

is an essential part of the diet. Useless as this ash is to the housewife and stoker, the ash in our food is an indispensable part of the dietary."

This reference to "ash" is made in his work on "Vitamines." Unfortunately the layman finds the word "ash," used in this sense, confusing if not misleading.

In the first place there is no ash in any food consumed by man or animal. We do not get ash until we burn the food in an incinerator just as we burn coal or wood in a stove or over a pair of fire-dogs. Ash is what is left after combustion.

When whole wheat, whole corn, natural brown rice or milk is burned, reduced to ash, it is discovered that something remains to be cleaned up—something very similar to the ash on the hearth after the burning of a log. When this ash is analyzed it is found to consist of the compounds of iron, lime, potassium, phosphorus, sulphur, magnesium, manganese, silicon, sodium, etc. When these compounds, loosely described as "mineral salts," are rescued from the ash they are not the same in form, character, or conduct as they were before combustion. The fire has demolished, rearranged, broken down, destroyed the living structures of which they now are merely the ash.

Ash is but a scar of what was once a beautiful face; a charred waste testifying to the former existence of a lovely landscape; a heap of ruins mutely assuring the passer-by that something noble has been destroyed!

There is no ash in food. It is for this reason that the pharmacist finds himself stumped and baffled when he attempts to put back into a human body an assortment of minerals something like the assortment recovered by the chemist from the "ash" of incinerated whole food, but never recovered from the "ash" of refined food.

All attempts to isolate living solubles, active vitamines, are handicapped by the processes necessary to separate such vaguely sensitive compounds from their living environment. One would find it similarly difficult to tear down a house with the intention of leaving the wall paper standing, or rather hanging, in air where the walls of halls, staircase, and rooms had stood.

Of course, there are solubles which we shall undertake to describe later on, but they would be more properly termed "keystones." They occupy important places in many of the arches of nutrition. Without them the structure tumbles, yet of themselves they can form no arch. Without the building stones they are asked to hang in air. They are units in a group. They are even more abstract than that. They are the overlay in the most intricate of associations. They are like the color of claret, diffused through every drop; like day over every part of a cloudless sky at noon. They can't be wrung out of some milk or

all whole grain bread, or all green leaves, or some egg yolks, or all tomatoes, as the juice is squeezed from an apple.

The very act of separating them from real food exposes them to unnatural chemical action; subjects them to conditions not similar to the conditions found in their natural environment and among their natural associates.

This is the great contribution of earnest, honest workers to the 1921 literature of nutrition.

Toothless, and Can't Perspire

The attention of the medical world has become very much interested in the case of Tom Dawkins, a negro, of Gaffney, S. C., who never had any teeth and who was unable to perspire. The American Journal of Heredity has asked that further information be secured about Dawkins and his family in order that the scientific world may be enlightened on this most remarkable case.

The attention of the medical fraternity was attracted when Dawkins, who was about 55 years of age, was found dead on the bank of a stream a few weeks ago. There is said to be scientific proof that a race of negroes once lived in India who were toothless and unable to perspire. But, so far as can be ascertained, no such people have ever been found in the United States. The supposition is that the Dawkins family is a throw-back from these Indian ancestors.

Investigation reveals that Dawkins has two sisters, both of whom are toothless, as he was, and neither of whom is able to perspire. They are described by their employers as being splendid farm hands, but the two women are forced, by reason of their inability to obtain relief from heat through perspiration, to take tubs of water with them when they go to work in the fields, and at frequent intervals they are forced to immerse themselves in the water. This, of course, does not apply when the scene of their activities is in the vicinity of a running stream, as they are enabled to take refuge in the water on such occasions.

It is presumed that Tom Dawkins, when he came to his death, had been overcome in the field by the heat, and was making his way to a stream nearby to seek relief, when he collapsed on the edge of the creek and was unable to get his body into the water.

Those who have known this family of negroes all their lives say that the parents of the three were perfectly normal in every way, but none of the children ever had teeth and none of the three was ever able to perspire.

It is said that the medical fraternity is making arrangements to fully investigate this family, with a view to determining their origin. The medicos will also make a study of the living sisters in order to determine why they cannot perspire.

STATEMENT OF THE OWNERSHIP, MANAGEMENT, CIRCULATION, ETC., REQUIRED BY THE ACT OF CONGRESS, OF AUGUST 24, 1912

Of The Dental Digest
at New York, N. Y.
State of New York
County of New York ss.

Published monthly
for October 1, 1921

Before me, a Notary Public in and for the State and county aforesaid, personally appeared John R. Sheppard, who, having been duly sworn according to law, deposes and says that he is the Secretary of the Dentists' Supply Co., Publishers of The Dental Digest, and that the following is, to the best of his knowledge and belief, a true statement of the ownership, management, etc., of the aforesaid publication for the date shown in the above caption, required by the Act of August 24, 1912, embodied in section 443, Postal Laws and Regulations, printed on the reverse of this form, to wit:

1. That the names and addresses of the publisher, editor, managing editor, and business manager are:

NAME OF	POST OFFICE ADDRESS
Publisher, The Dentists' Supply Company	220 West 42nd St., New York
Editor, George Wood Clapp	New Rochelle, N. Y.
Managing Editor, George Wood Clapp	New Rochelle, N. Y.
Business Manager, Lawrence W. Dunham	New Rochelle, N. Y.

2. That the owners are:

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THE DENTISTS' SUPPLY COMPANY,
J. R. Sheppard, *Sec'y & Treas.*

Sworn to and subscribed before me this 26th day of September, 1921.

[Seal] Gretchen M. Baltz
Notary Public, Westchester County
Certificate filed in N. Y. County
Clerk's No. 631; Register's No. 3520—My commission expires March 31, 1923.

November

November woods are bare and still;
November days are clear and bright;
Each noon burns up the morning's chill,
The morning's snow is gone by night.
Each day my steps grow slow, grow light,
As through the woods I reverent creep
Watching all things lie down to sleep.

FUTURE EVENTS

The fifty-sixth annual meeting of the OHIO STATE DENTAL SOCIETY will be held in Memorial Hall, Columbus, December 6th, 7th and 8th, 1921.

Members of other state societies are cordially invited to attend all sessions.

F. R. CHAPMAN, *Secretary,*
305 Schultz Bldg., Columbus, O.

THE SOUTHWEST MISSOURI DISTRICT DENTAL SOCIETY will hold a three-day clinic December 12, 13 and 14th, 1921. Drs. Willis Coston of Topeka, Kansas, Geo. B. Winter, of St. Louis, and Edouard M. Hall, of Kansas City will appear on the program. All ethical practitioners cordially invited to attend.

W. W. BROWN, *Secretary.*

The annual meeting of the DENTAL PROTECTIVE ASSOCIATION OF THE UNITED STATES will be held at the Palmer House, State and Monroe Streets, Chicago, on the third Monday of December, the 19th, at 4 P. M. sharp. The report of the officers will be given; a Board of Directors will be elected and such other business transactions as should come before the Association.

All members are urgently requested to be present.

By order of the Board of Directors,

J. G. REID, *President,*
D. M. GALLIE, *Vice-President and Treasurer,*
E. W. ELLIOT, *Secretary.*

At Trenton, N. J., January 9, 10 and 11, 1922, the third annual meeting of the AMERICAN ACADEMY OF APPLIED DENTAL SCIENCE will be held.

Dr. Henry A. Cotton, will give a bacteriological and pathological exhibit of the work being accomplished at the New Jersey State Hospital. Class work, papers and clinics will be features of the meeting. All members of the dental and medical professions are cordially invited to attend. Information gladly furnished upon request to Clerk, American Academy of Applied Dental Science, Yonkers, N. Y.

The thirty-ninth annual meeting of the MINNESOTA STATE DENTAL ASSOCIATION will be held at the Minneapolis Armory, on February 22nd to 25th, 1922.

C. H. TURNQUIST, *Secretary.*